

G. S. WHITTAKER.
 SUCTION DEVICE FOR DENTAL PLATES.
 APPLICATION FILED JUNE 29, 1908.

906,977.

Patented Dec. 15, 1908

Fig. 1.

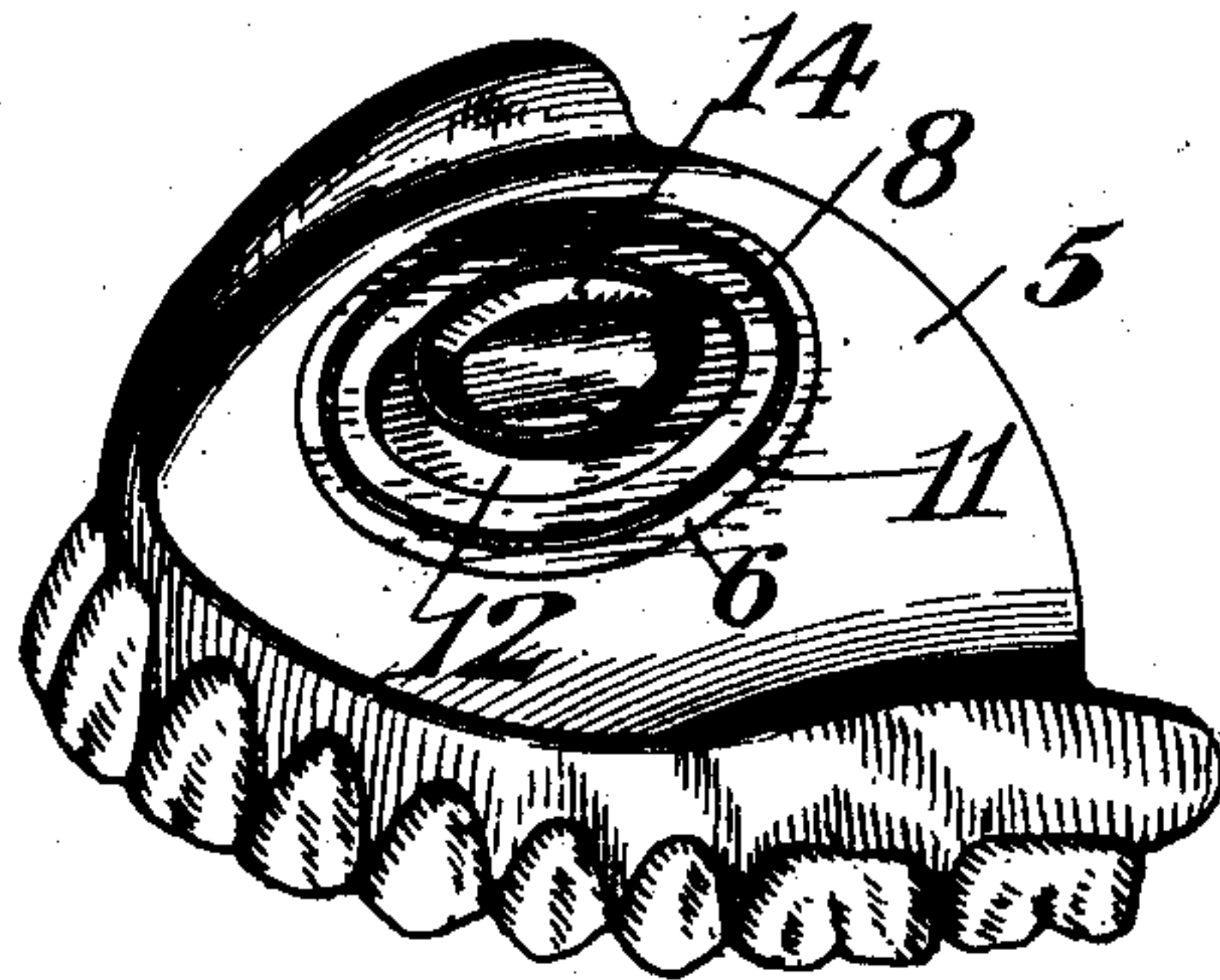


Fig. 5.

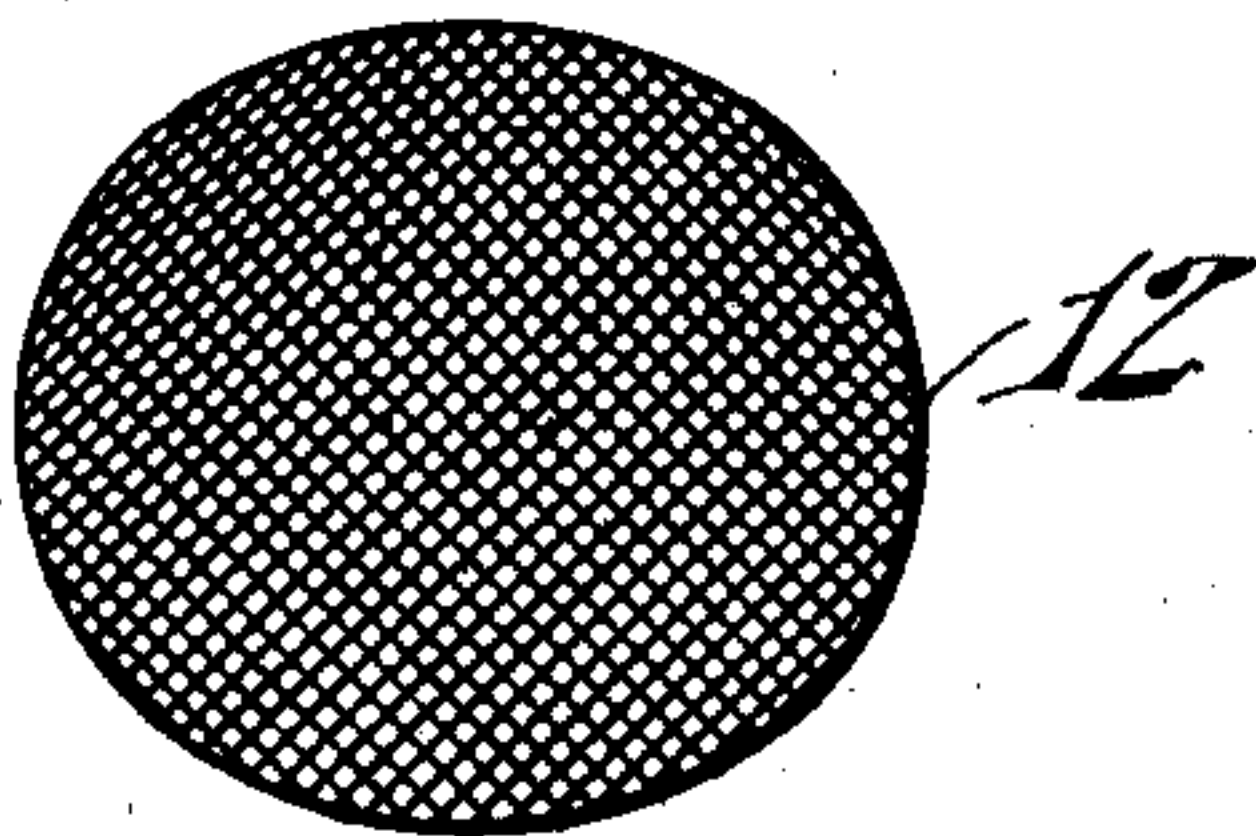


Fig. 2.

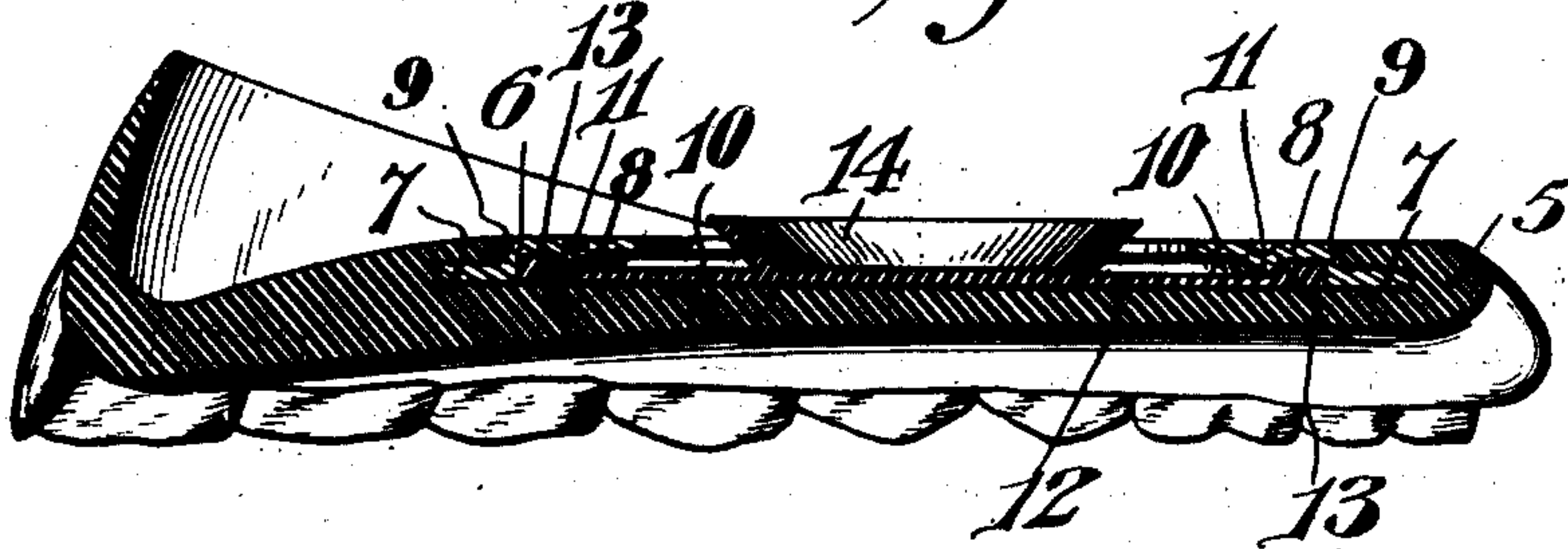


Fig. 3.

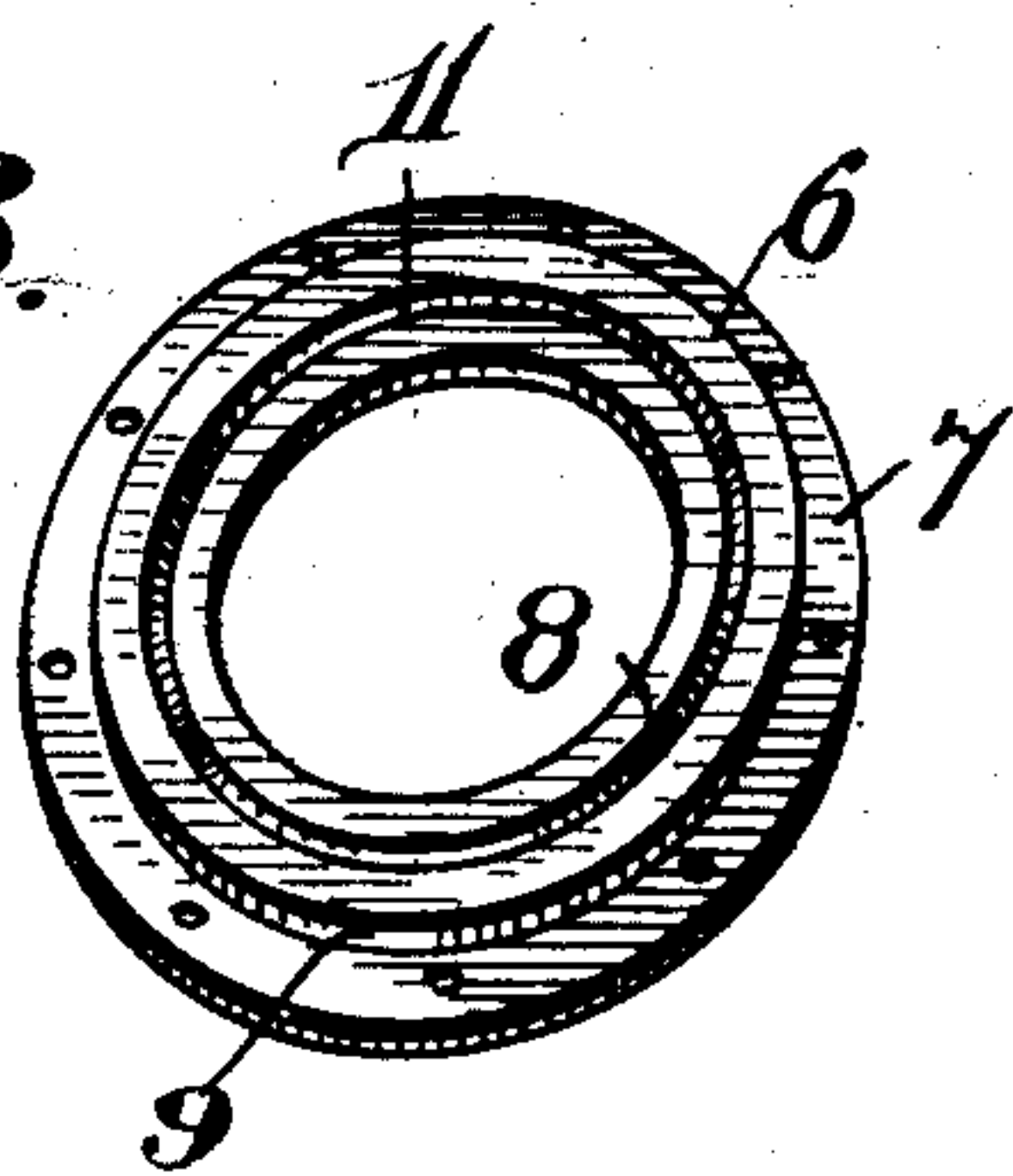
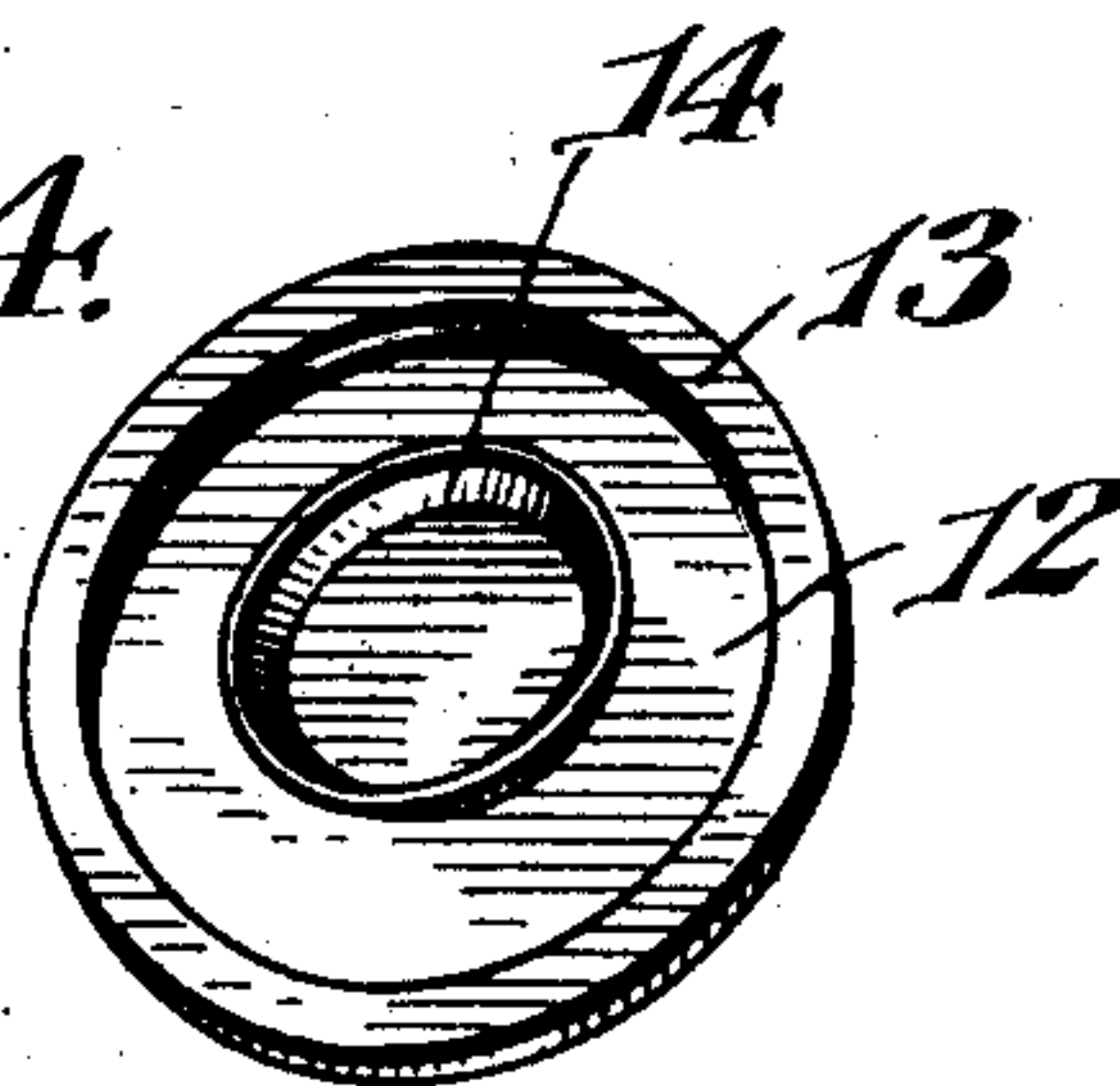


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

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SUCTION DEVICE FOR DENTAL PLATES.

No. 906,977.

Specification of Letters Patent.

Patented Dec. 15, 1908.

Application filed June 29, 1908. Serial No. 440,909.

To all whom it may concern:

Be it known that I, GEORGE S. WHITTAKER, a citizen of the United States, residing at Gloversville, in the county of Fulton and State of New York, have invented a new and useful Suction Device for Dental Plates, of which the following is a specification.

This invention relates to means for holding a dental plate to the roof of the mouth. One of the great difficulties experienced with the suction devices now in general use is that they are permanently fastened in place, and therefore if the plate has to be softened and revulcanized the yielding suction device becomes so hard that the suction is ruined and the device is therefore useless.

One of the primary objects of the present invention is to provide novel means of a yielding character that will constitute a secure holding device, and can be readily detached if it is desired to re-form the plate, so that it will not be injured by revulcanization.

A further and important object is to provide a novel device that will have a double suction, thereby being more effectively held in place.

The preferred embodiment of the invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a perspective view of a dental plate, showing the improved suction device in place. Fig. 2 is a vertical sectional view on an enlarged scale through the same. Fig. 3 is a perspective view of the holding ring. Fig. 4 is a perspective view of the yielding suction element. Fig. 5 is a bottom plan view of the yielding suction element.

Similar reference numerals designate corresponding parts in all the figures of the drawings.

In the embodiment illustrated, the plate is designated 5 and may be of any well known character. Embedded in its upper portion is a holding ring 6, the same comprising an outer marginal flange 7 and a flange 8 outset from the flange 7 and connected thereto by an offset portion 9. The flange 7 is embedded in the plate, as shown, while the flange 8 has its outer face preferably flush with the same, its inner face, however, being spaced from the adjacent portion of the plate, forming a socket 10 that communicates with the opening or

hole through the ring. It will be observed that the flange 10 has an inset retaining rib 11.

The suction element preferably consists of soft rubber or other suitable material, and comprises a cup disk 12 having an outstanding rib 13 on its margin. The central portion of said disk is provided with an outwardly flared flange, forming an integral cup 14. The cup disk is introduced through the opening of the holding ring 6, with its marginal portions engaged beneath the flange 8, the rib 13 interlocking with by engaging behind the rib 11, while the remaining portion of the cup disk beneath the flange 8 is spaced from said flange, as will be evident by reference to Fig. 2. The cup 14 is of less extent than the opening through the holding ring, and said cup can be forced directly into the ring, as will be evident.

In forming the plate, the ring is secured to the cast, and the central portion between the offset part 9 and the opening is filled with a paper or other disk, after which the composition is placed in position. After being molded and vulcanized, the material is removed, leaving the space beneath the flange 8 as will be evident. The yielding suction device or cup disk is then placed in position, and may either be detachable or can be cemented. Its rear face therefore is preferably roughened or checked as shown in Fig. 5. In any case, however, its application is made after the plate has been completed, and it can be removed in case the plate is to be softened and revulcanized, so that it will not become hardened and useless.

It will be evident that the structure is comparatively simple and cheap, and the parts are not liable to accidental displacement. Moreover a double suction is produced, for the space left between the flange 8 and the cup disk 12 provides an air chamber, from which a portion of the air is expelled by the forcing of the cup 14 into the opening of the holding ring, and the interior of this cup also forms a separate and distinct chamber, from which the air is expelled. Consequently a double suction is produced that effectively secures the plate in position without injuring or irritating the roof of the mouth.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention, will

be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. A structure of the character set forth, comprising a dental plate, a holding ring embedded in the plate and having an outset flange spaced from the plate, and a yielding suction device independent of the plate and having its marginal portions detachably engaged beneath the flange in the space between the same and the plate.
2. A structure of the character set forth, comprising a dental plate, a holding ring embedded in the plate and having an outset flange spaced from the plate, and a yielding suction device separate from the plate and comprising a disk having its marginal portions engaged beneath the flange in the space between the same and the plate and an outstanding yielding cup carried by the central portion of said disk.
3. A structure of the character set forth, comprising a dental plate, a holding ring having oppositely extending flanges with an offset portion connecting the same, one of the flanges being embedded in the plate, the other having its inner face spaced from the plate, forming a recess that communicates with the opening through the ring, and a yielding suction device comprising a cup disk having its marginal portions engaged beneath the flange in the space between the same and the plate, and an outstanding yielding cup carried by the central portion of the disk and of less extent than the opening through the ring, said cup being movable into and out of the opening.
4. A structure of the character set forth, comprising a dental plate, a holding ring having its peripheral portion embedded in the plate, and an outstanding inner flange that is spaced from the plate, said flange having an inset retaining rib, and a suction device engaged beneath the flange and having a portion interlocked with the retaining rib.
5. A structure of the character set forth, comprising a dental plate, a holding ring having its peripheral portion embedded in the plate and having an outset inner flange that is spaced from the plate, and a suction device separate from the plate and having a portion

secured in the space between the flange and plate and spaced from said flange.

6. A structure of the character set forth, comprising a dental plate, a holding ring having oppositely extending flanges with an offset portion connecting the same, one of the flanges being embedded in the plate, the other flange having its inner face spaced from the plate, forming a recess communicating with the opening through the ring, said latter flange also having an inset continuous rib, and a yielding suction device comprising a cup disk of yielding material having its marginal portions engaged beneath the flange in the space between the same and the plate, said cup disk having an outstanding rib interlocked with the inset rib of the flange and having a portion inside of said rib spaced from the flange and an outstanding integral cup carried by the central portion of the disk and of less extent than the opening through the ring, said cup being formed of flexible material and being compressible into the opening.

7. A structure of the character set forth, comprising a dental plate having a socket in its upper side and an inwardly extending flange that is disposed over the bottom of the socket in spaced relation to said bottom, and a yielding suction device separate from the plate, said device comprising a disk having its marginal portions detachably engaged beneath the flange in the space between the same and the plate, and an outstanding yielding cup carried by the central portion of said disk.

8. A structure of the character set forth, comprising a dental plate having a socket in its upper side and an inwardly extending flange that is disposed over the bottom of the socket in spaced relation to said bottom, said flange being provided with an inwardly extending rib, and a yielding suction device comprising a cup disk having its marginal portions engaged beneath the flange in the space between the same and the plate, said disk having an outstanding rib interlocked with the inset rib of the flange and having a central outstanding cup that is compressible into the opening formed by said flange.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

GEORGE S. WHITTAKER.

Witnesses:

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