No. 751,582. PATENTED FEB. 9, 1904.

R. WALKER.

STRENGTHENER FOR VULCANITE ARTIFICIAL TEETH BASES.

APPLICATION FILED OCT. 31, 1903.

NO MODEL.

Fig. 1.

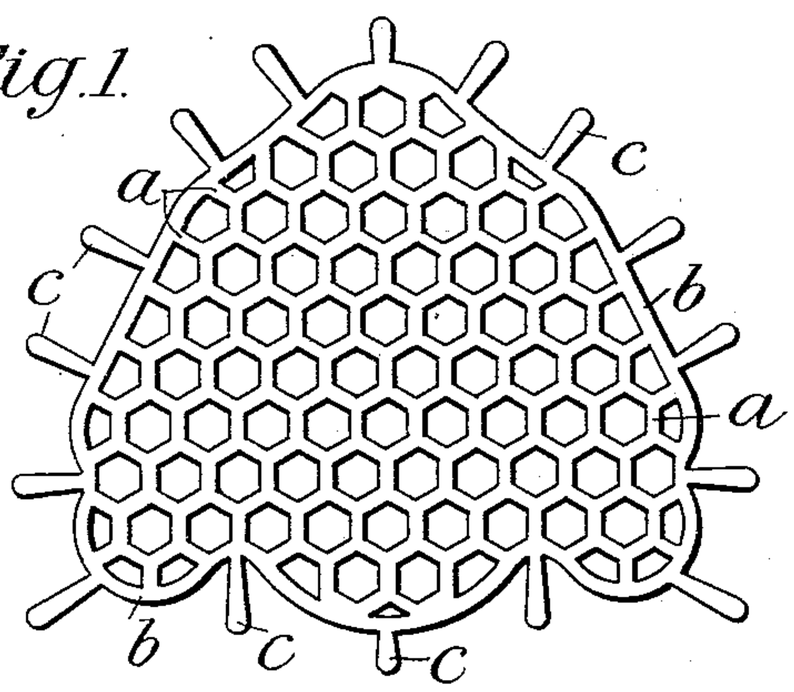

Fig. 2.

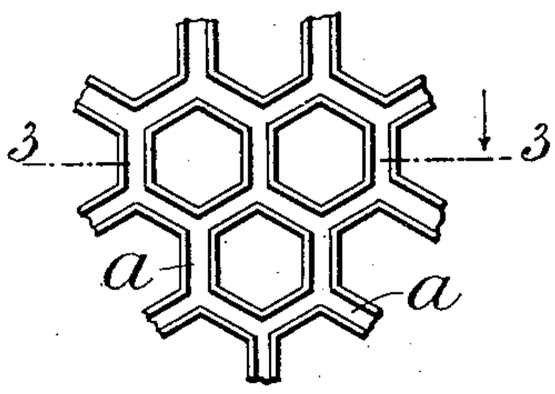

Fig. 3.

Fig. 4.

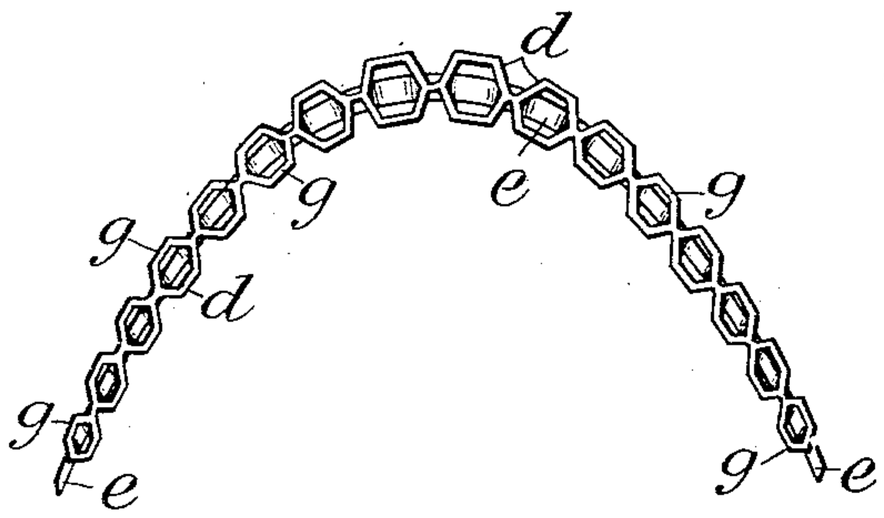

Fig. 5.

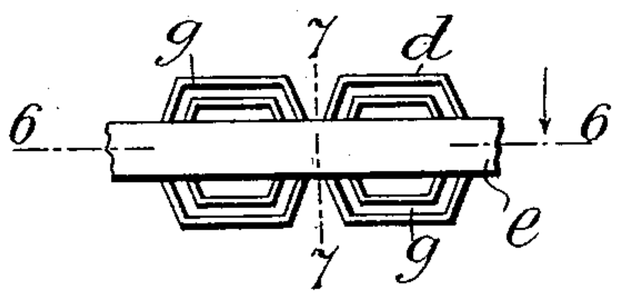

Fig. 6.

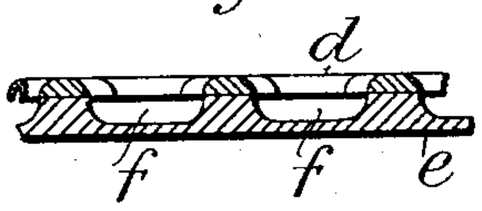

Fig. 7.

WITNESSES.

Martin Roberts

Roswell S. Nichols

INVENTOR.

Robert Walker

by Redding, Kidelle & Greeley

His Attys

No. 751,582. Patented February 9, 1904.

UNITED STATES PATENT OFFICE.

ROBERT WALKER, OF LONDON, ENGLAND.

STRENGTHENER FOR VULCANITE ARTIFICIAL-TEETH BASES.

SPECIFICATION forming part of Letters Patent No. 751,582, dated February 9, 1904.

Application filed October 31, 1903. Serial No. 179,272. (No model.)

To all whom it may concern:

Be it known that I, ROBERT WALKER, a subject of the King of Great Britain, residing at London, England, have invented a certain new and useful Improvement in Strengtheners for Vulcanite Artificial-Teeth Bases, of which the following is a specification.

The invention relates to strengtheners for the vulcanite bases of artificial teeth, the object being to provide strengthening means which will not work or cut their way through the vulcanite covering and yet be light in weight, elastic, and sufficiently strong for the purpose required.

Strengtheners for vulcanite artificial-teeth bases of various forms are at present in use; but all those that I am aware of either from being too open have a tendency to cut or work through the vulcanite in their expansion or contraction when the latter is bent to and fro or in other constructions from being too solid they fail to properly interlock or grip the vulcanite, and hence become separated therefrom.

In the accompanying drawings are illustrated strengtheners for both upper and lower cases constructed according to my invention.

Figure 1 is a plan looking upward of an upper-case strengthener; Fig. 2, an under side view of a part of same on an enlarged scale; Fig. 3, a section of Fig. 2 on line 3 3; Fig. 4, a perspective view of a strengthener for a lower case; Fig. 5, an under side view of a part of same on an enlarged scale; Fig. 6, a section of Fig. 5 on line 5 5, and Fig. 7 a cross-section of Fig. 5 on line 7 7.

According to my invention I employ a metal strengthening device composed of a metal plate of any suitable thickness, according to the nature of the metal, pierced with such a number of openings that it becomes almost a metal fabric, as shown in Figs. 1 to 3, the meshes or portions of which surrounding the openings are so connected together that when the plate is embedded in the vulcanite any bending of the latter will result only in a bending of the material and not in an opening out or expansion of same. The material or fabric for this purpose is stamped from a sheet of suitable material, so that the meshes *a* or portions surrounding the openings are dished concavo-convex in section, as best seen in Fig. 3, (whereby a better holding effect is obtained in the vulcanite,) and are provided with an inclosing edge or wall *b*, Fig. 1, similarly dished, which binds the whole together and prevents any part expanding or opening when bent, though it does not prevent the material from being easily bent by the fingers to the desired shape or curvature.

In the instance of an upper case the piece is exteriorly suitably shaped to the palate and may carry by the edge or wall *b*, if desired, a series of projecting lugs *c*, which can be bent into the spaces between the teeth or bent up into the vulcanite for holding purposes.

The openings inside the meshes are preferably polygonal in shape in this form to afford a better hold to the vulcanite.

For the purposes of a lower case, Figs. 4, 5, 6, 7, a strip *d* of the material above described is employed in such a form that its outside edges *g* present a continuous line, whereby the desired effect under expansion or contraction is obtained. Such a strip is backed by a rod of metal *e*, which for lightness and strength and for its holding effect on the vulcanite is formed of a T shape in the form illustrated, or it may be a channel or other like section, and which, together with the material *d*, can be bent into the desired shape. The rod of metal may be a continuous one, the rib being soldered or secured to the under side of the strip *d* at the points it touches the meshes; but I prefer to cut such rib away, as at *f*, Fig. 6, to lighten it and also to provide more surface for the vulcanite to penetrate into.

In both cases the mesh material or strip when embedded in the vulcanite will present its widest faces to the line of least resistance through the latter, whereby they will have less tendency to work through same when bending of the vulcanite takes place, and this effect is greatly assisted by the concavo-convex character of same.

The strengtheners are placed in the vulcanite upper or lower cases during the manufacture and may either be completely embedded therein or, if of suitable metal, may be em-

bedded only flush with the surface and be polished with the vulcanite.

I am aware that metal gauze is at present used for the purpose of strengthening upper cases; but by reason of its not being contained within a single binding line or edge its thickness has to be greater than a strengthening device of a similar size constructed according to my invention. I am also aware that a filigree metal device or corrugated wire applied to a bar is used for lower cases and without a bar for upper cases; but such filigree work or the like has no continuous binding-line and presents not only the disadvantages of expansion I have above referred to, but is arranged edgewise to the line of least resistance—a point which it is my object to avoid.

What I claim is—

1. A strengthener for vulcanite artificial-teeth bases comprising a metallic plate perforated with openings, and having a continuous metallic edge surrounding, inclosing, and forming a part of said perforated plate, and a number of metallic tongues forming part of, and projecting outwardly from, said surrounding edge.

2. A strengthener for vulcanite artificial-teeth bases comprising a metallic plate having open perforations, the walls of which form a surrounding continuous edge concavo-convex in section, presenting its widest face to the line of least resistance through the vulcanite, and a backing-rod secured thereto.

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

ROBERT WALKER.

Witnesses:

ALLEN PARRY JONES,

ARTHUR H. ALFORD.