

Specification of John Henry Johnson : artificial palates.

Contributors

Johnson, John Henry.

Publication/Creation

London : Great Seal Patent Office, 1875 (London : George E. Eyre and William Spottiswoode)

Persistent URL

<https://wellcomecollection.org/works/yukq3ee2>

License and attribution

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.



Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>



A.D. 1874, 1st DECEMBER. N^o 4123.

SPECIFICATION

OF

JOHN HENRY JOHNSON.

ARTIFICIAL PALATES.

LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,

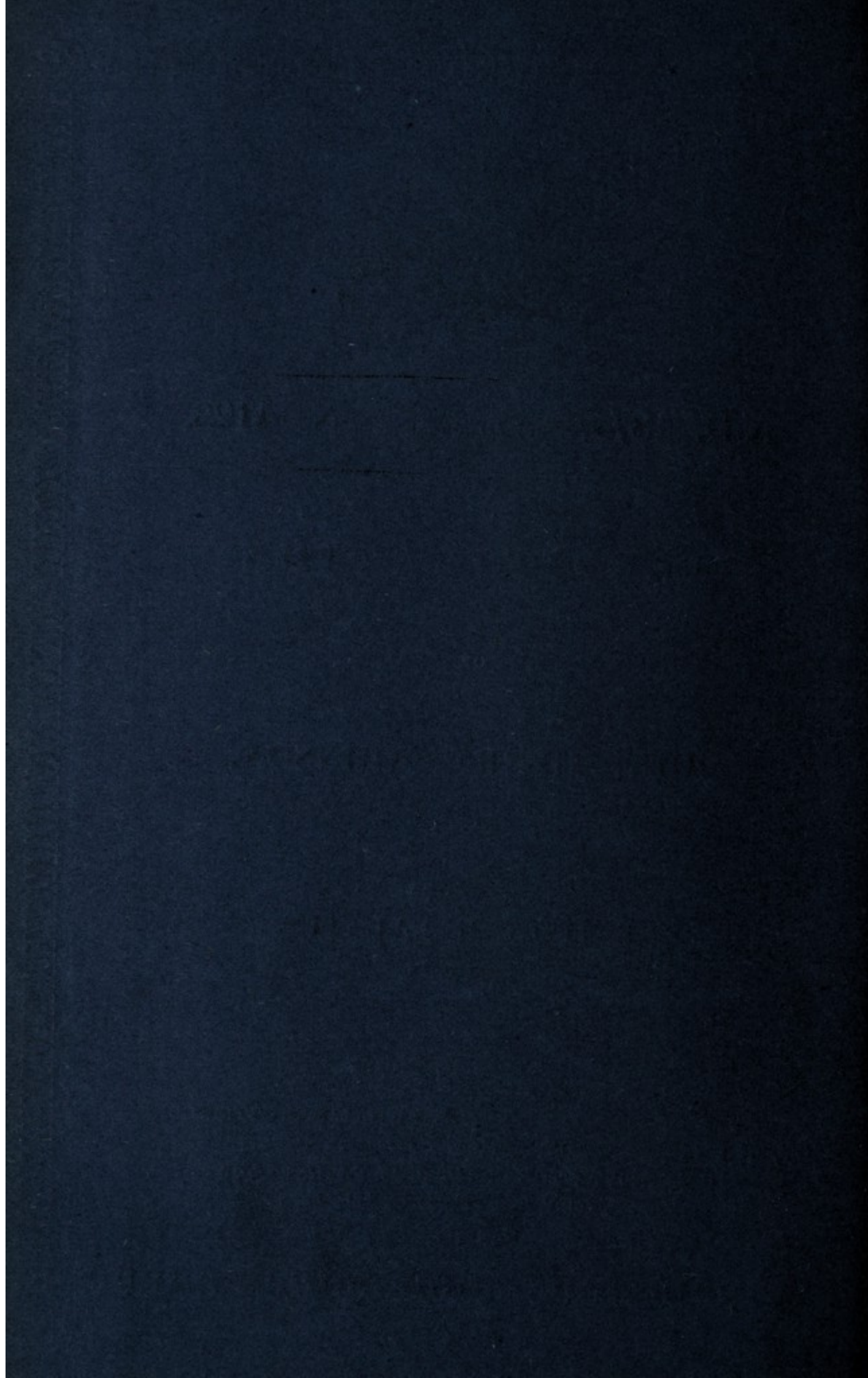
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY:

PUBLISHED AT THE GREAT SEAL PATENT OFFICE,

25, SOUTHAMPTON BUILDINGS, HOLBORN.

Price 3d.

1875.





~~~~~  
A.D. 1874, 1st DECEMBER. N° 4123.  
~~~~~

Artificial Palates.

LETTERS PATENT to John Henry Johnson, of 47, Lincoln's Inn Fields, in the County of Middlesex, Gentleman, for the Invention of "IMPROVEMENTS IN ARTIFICIAL PALATES."—A communication from abroad by Jacob Peyer, of Berne, Switzerland, Doctor of Medicine.

Sealed the 19th January 1875, and dated the 1st December 1874.

PROVISIONAL SPECIFICATION left by the said John Henry Johnson at the Office of the Commissioners of Patents, with his Petition, on the 1st December 1874.

I, JOHN HENRY JOHNSON, of 47, Lincoln's Inn Fields, in the
5 County of Middlesex, Gentleman, do hereby declare the nature of the said Invention for "IMPROVEMENTS IN ARTIFICIAL PALATES," a communication to me from abroad by Jacob Peyer, of Berne, Switzerland, Doctor of Medicine, to be as follows:—

10 This Invention relates to means of or appliances for compensating for natural defects in or accidental injuries to the velum or curtain of the palate, and consists in the employment of a peculiar arrangement of

Johnson's Improvements in Artificial Palates.

obturator for the roof of the mouth, composed of hardened india-rubber or vulcanite in combination with a valve or moveable portion of similar material whereby a clear articulation is obtained, and the operation of deglutition is effected with the same facility as if the velum or curtain of the palate existed in its natural condition. This system of artificial 5 palate is applicable in all cases of injuries to the velum or curtain of the palate known under the denomination of rictus lupinus, that is to say, whether such velum or curtain exists partially or is entirely absent.

In carrying out this Invention a piece of a suitable form and dimensions of hardened india-rubber or vulcanite, herein-after termed 10 the "palate plate" is fitted in the roof of the mouth firmly against the teeth, where it is secured by hooks composed of india-rubber, gold, or other suitable material, such palate plate extending from the incisors to the point at which the uvula is ordinarily situate, so as to be capable of replacing a greater or less portion of the velum or curtain of the palate. 15 At the rear end of the palate plate there is provided a moveable portion also composed of hardened indian-rubber or vulcanite, and forming a species of valve which is designed to completely close the pharynx in order to prevent the escape of air through the nose, and obtain a perfectly clear emission of sound. This valve is so arranged as to open 20 upwards at the time of deglutition, and close as soon as the food has passed beneath it, and during the act of opening it also becomes shortened or moves forward slightly into the cavity of the palate. This motion of the valve is obtained in the following manner, viz^t. :—On the upper face of the palate plate there is provided a hinge of gold, or platinum, or other 25 suitable material, to which is jointed a lever of gold or other suitable material, which extends inside a sheath or casing composed of a similar material to the lever and fitted within the body of the valve. This lever is connected to the valve by means of a screw passing through a longitudinal slot formed in the lever, by which means the requisite play is 30 obtained to admit of the to-and-fro or sliding motion of the valve, a helical spring fitted in a groove or otherwise being provided for the purpose of bringing the valve back into its normal position.

When the palate is entirely absent the valve is formed of three parts, one of which placed centrally is made of an oval shape and provided 35 with the sheath or casing for the lever, whilst the other two parts which are disposed laterally present the form of a uvula, and are furnished with

Johnson's Improvements in Artificial Palates.

external flanges or rims corresponding to the shape of the sides of the cavity of the palate in order to close the same.

The lateral portions of the valve which are jointed to the central portion are connected together by means of a pin fitted on one portion, 5 and capable of sliding in a groove in the other, and also by a transverse helical spring which tends to maintain the two portions constantly apart.

When the defects or injuries are but trifling the valve is so arranged as to exactly fill the openings or cavities, and the lateral motions are 10 dispensed with. In this modification it is not necessary that the mechanical portions should be imbedded in the india-rubber (as is the case where the injury is of greater extent), but they may be made to project therefrom.

Nuts composed of gold or platinum are inserted in all cases wherever 15 attachment or connecting screws are employed.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said John Henry Johnson in the Great Seal Patent Office on the 28th May 1875.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, JOHN 20 **HENRY JOHNSON**, of 47, Lincoln's Inn Fields, in the County of Middlesex, Gentleman, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the First day of December, in the year of our Lord One thousand eight hundred and seventy-four, in the 38th 25 year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said John Henry Johnson, Her special license that I, the said John Henry Johnson, my executors, administrators, and assigns, or such others as I, the said John Henry Johnson, my executors, administrators, or assigns, should at any time agree with, and no others, 30 from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "**IMPROVEMENTS IN ARTIFICIAL**

Johnson's Improvements in Artificial Palates.

PALATES," a communication to me from abroad by Jacob Peyer, of Berne, Switzerland, Doctor of Medicine, upon the condition (amongst others) that I, the said John Henry Johnson, my executors or administrators, by an instrument in writing under my hand and seal, should particularly describe and ascertain the nature of the said Invention, and in what 5 manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said John Henry Johnson, do hereby declare the nature of the said Invention, and in what manner the same 10 is to be performed, to be particularly described and ascertained in and by the following statement, reference being had to the accompanying Drawings, and to the letters and figures marked thereon, that is to say :—

The said Invention relates to means of or appliances for compensating 15 for natural defects in or accidental injuries to the velum or curtain of the palate, and consists in the employment of a peculiar arrangement of obturator for the roof of the mouth composed of hardened india-rubber or vulcanite, in combination with a valve or movable portion of a similar material whereby a clear articulation is obtained, and the operation of 20 deglutition is effected with the same facility as if the velum or curtain of the palate existed in its natural condition. This system of artificial palate is applicable in all cases of injuries to the velum or curtain of the palate known under the denomination of rictus lupinus, that is to say, whether such velum or curtain exists partially or is entirely absent. 25

The artificial palate consists of a plate designated, the palate plate which is composed of hardened india-rubber and fits firmly against the teeth where it is secured by hooks of india-rubber or gold. This palate plate extends from the incisors to the back of the mouth, that is to say, to the point at which the uvula is situate in its normal condition in 30 such a manner as to be capable of replacing a greater or less portion of the velum or curtain of the palate. The plate is provided at its rear end with a moveable portion, also composed of hardened india-rubber or vulcanite, and forming a species of valve which is destined to completely close the pharynx in order to prevent the air from escaping by the 35 nostrils, and thus to render the emission of sound perfectly clear and distinct. Moreover in order to obviate the pain and inconvenience which might arise at the period of or during the deglutition of food of

Johnson's Improvements in Artificial Palates.

either a liquid or solid nature, the valve is arranged in such a manner as to open upwards and to close again immediately when the food has passed beneath it. As also the back portion of the pharynx is narrower in its upper part, corresponding with the cavity of the nose, the valve is so
5 arranged as to become shortened or contract slightly at the moment when it opens, that is to say, at the same time that it is raised it is displaced, moving forwards into the cavity of the palate. It is evident therefore that with this arrangement the valve operates in exactly the same manner as the velum or curtain of the palate in its natural condition.
10 This displacement of the valve is obtained by very simple mechanism which is arranged in the following manner:—The upper surface of the palate plate is provided with a hinge of gold or platinum to which is jointed by means of a screw a flat lever of gold, which extends to the interior of a species of sheath or slide composed of the same metal, and
15 fitted in the valve constituting the rear part of the apparatus. This sheath or slide has attached to its rear end a screw which is capable of traversing or sliding along a longitudinal slot formed in the lever, by which means the parts are connected together whilst the valve is free to move as before-mentioned, the position of this screw and the dimensions of the
20 slot limit the extent of the recoil motion of the valve in such a manner that it corresponds only with the regular working of the system.

A spiral spring of gold fastened by two screws, one of which is fitted upon the hinges above mentioned, and the other upon the valve, is employed for the purpose of causing the latter to resume its normal
25 position which it is to occupy, and from which it is removed in consequence of the displacement produced by the act of deglutition.

And in order that the said Invention may be fully understood I shall now proceed more particularly to describe the same, and for that purpose shall refer to the several Figures on the annexed Sheet of Drawings,
30 the same letters of reference indicating corresponding parts in all the Figures.

Figure 1 of the accompanying Drawings is a plan; Figure 2 is a sectional elevation, and Figure 3 are detail views of apparatus constructed according to one mode of carrying out this Invention.

35 Figures 4, 5, and 6, are similar views illustrating a modification of the apparatus shewn in Figures 1, 2, and 3, and Figure 7 represents a

Johnson's Improvements in Artificial Palates.

further modification of apparatus constructed in accordance with this Invention.

In the arrangement shown in Figures 1, 2, and 3, the obturator is specially designed for patients in whom the uvula or a portion only of the velum or curtain of the palate is attacked. The india-rubber palate 5 plate *a* is provided at its upper part as before mentioned with a hinge *b*, having jointed thereto the lever *c* which enters the slide *d* fitted to the india-rubber valve *e*, the spring *f* which is intended to bring back the valve *e* constantly to its normal position is sunk or let into a groove formed in the parts, so as not to meet or come in contact with the 10 sensitive portions of the palate, or cause them any inconvenience during the working of the apparatus.

It is obvious that in constructing obturators on this system, every facility is afforded for inserting teeth where they are missing as in other systems. 15

In the arrangement of valve shown in Figure 7 which is more particularly designed or adapted for patients in whom the palate is entirely absent or defective, the apparatus consists as before of a palate plate furnished with a valve, which in this case is composed of three pieces, videlicet., an oval piece *g* in which the slide *d* is fitted and two side 20 pieces *h*, *h*¹, which present the form of a uvula as shewn in the Drawing; the external edges of these side pieces are made to correspond exactly to the shape of the sides of the cavity of the palate so as to close the same. The two pieces *h*, *h*¹, are hinged upon the piece *g* at *g*¹, and united to one another by means of a pin *i* carried upon the extremity of the piece 25 *h*, and capable of sliding in a slot *i*¹ formed in the extremity of the piece *h*¹, and also by means of a transverse spring *j* which continually tends to maintain the pieces *h*, *h*¹, apart the one from the other. The apparatus thus operates without causing pain to the patient by reason of the displacement of which the parts are capable. 30

In the arrangement shown in Figures 4, 5, and 6, the valve is arranged in such a manner as to fill exactly the openings or cavities which may exist in those cases in which the injuries to the palate are only slight, and where consequently the lateral movements herein-before described are unnecessary. The parts which constitute this apparatus 35 are then the same as those shewn in Figures 1, 2, and 3, only as in the cases in which this arrangement is employed the upper part of the

Johnson's Improvements in Artificial Palates.

palate is almost entirely wanting it is not necessary to sink or imbed the mechanical parts in the thickness of the mass or body of india-rubber of the palate plate *a*, the spring *f* is therefore arranged so as to project from the palate plate, the hinge *b*, the lever *c*, the slide *d*, and
5 the valve *e* remaining however the same, and being placed in a manner similar to that herein-before described with reference to Figures 1, 2, and 3.

Whatever may be the form and arrangements of the obturator nuts of gold or platinum are inserted at all the parts of the piece of india-rubber,
10 at which fixing or uniting screws are to be placed in order to impart to it perfect firmness at all its points of attachment and joints.

Having now described and particularly ascertained the nature of the said Invention, and the manner in which the same is or may be used or carried into effect, I would observe in conclusion that what I
15 consider to be novel and original, and therefore claim as the Invention secured to me by the herein-before in part recited Letters Patent is, the employment for defects in or injuries to the velum or curtain of the palate of the peculiar artificial palate or obturator, having its rear portion movable so as to constitute a valve which is fitted and com-
20 bined with the other portions in such a manner as to perform the functions of the natural velum or curtain of the plate, and ensure a clear articulation of the voice, the whole being arranged and operating substantially as and for the purposes herein-before described and as illustrated by the accompanying Drawings.

25 In witness whereof, I, the said John Henry Johnson, have to this my Specification set my hand and seal, the Twenty-eighth day of May One thousand eight hundred and seventy-five.

J. HENRY JOHNSON. (L.S.)

LONDON:

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1875.

FIG. 1.



FIG. 2.



FIG. 3.



FIG. 4.

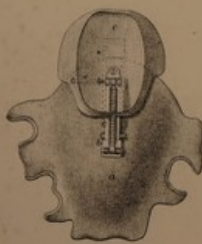


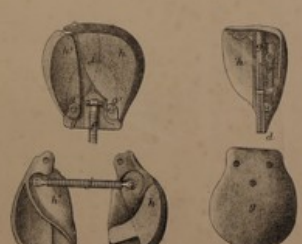
FIG. 5.



FIG. 6.



FIG. 7.



The fillet drawing is not colored.

