

## **Specification of Charles Nightingale : respirator.**

### **Contributors**

Nightingale, Charles.

### **Publication/Creation**

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A.D. 1871, 1st DECEMBER. N° 3257.

S P E C I F I C A T I O N

OF

CHARLES NIGHTINGALE.

RESPIRATOR.

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, 6d.

1872.







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A.D. 1871, 1st DECEMBER. N° 3257.

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### Respirator.

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**LETTERS PATENT** to Charles Nightingale, of Chirton Grange, Tyne-mouth, in the County of Northumberland, and of Sackville Street, in the County of Middlesex, Surgeon Dentist, for the Invention of  
"AN IMPROVED MOUTHPIECE FOR PROTECTING THE WEARER AGAINST ATMOSPHERIC INFLUENCES."

Sealed the 24th May 1872, and dated the 1st December 1871.

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**PROVISIONAL SPECIFICATION** left by the said Charles Nightingale at the Office of the Commissioners of Patents, with his Petition, on the 1st December 1871.

I, CHARLES NIGHTINGALE, of Chirton Grange, Tynemouth, in the  
5 County of Northumberland, and of Sackville Street, in the County of  
Middlesex, Surgeon Dentist, do hereby declare the nature of the said  
Invention for "AN IMPROVED MOUTHPIECE FOR PROTECTING THE WEARER  
AGAINST ATMOSPHERIC INFLUENCES," to be as follows:—

My said Invention relates to a plate or shield to be worn inside the  
10 lips to prevent inhalation through the mouth and compel the wearer to  
breathe naturally by inhalation through the nose.



*Nightingale's Improved Respirator.*

The object of the said Invention is the protection of the mouth, throat, and lungs against the cold or damp air, fog, or other noxious or unpleasant influences from which many persons suffer so severely. My said mouthpiece is designed to obviate the necessity of the inconvenient and unsightly respirators now ordinarily worn, and as when used it is 5 completely hidden by the lips of the wearer I call it an "invisible mouth protector."

The said mouth protector consists of a single thin piece or plate, which is shaped to fit conveniently and comfortably between the lips and the teeth. The plate is preferably made of gold or silver, though I may use 10 vulcanite or other materials suitable for the purpose, and it is formed to cover so much of the teeth and gums as would be visible with the mouth about half-way open.

The shape of the said mouthpiece may be modified by forming it to fit between the top and bottom teeth, and with a small portion turned 15 down to fit over the latter.

While preventing altogether any inhalation through the mouth it is necessary that means should be provided for permitting exhalation thereby, otherwise the wearer would be troubled by an accumulation of saliva and other inconveniences after using the protector a short time. 20 For this purpose I form in the plate a valve or two or more valves, which permit exhalation but not inhalation through the mouth. These valves are small tongues formed on the plate by punching or cutting the same in such a manner that the said tongues permit the egress but not the ingress of air. Or the said tongues may be soldered upon the plate 25 over suitable apertures formed therein.

In this manner I provide a mouth protector which is free from all of the objections to the use of an ordinary respirator, and which by preventing the inhalation of cold or damp air through the mouth obviates much suffering in the teeth, gums, throat, air passages, and lungs, and 30 diminishes the loss of the caloric of the body.



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*Nightingale's Improved Respirator.*

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**SPECIFICATION** in pursuance of the conditions of the Letters Patent filed by the said Charles Nightingale in the Great Seal Patent Office on the 1st June 1872.

**TO ALL TO WHOM THESE PRESENTS SHALL COME, I, CHARLES**  
5 **NIGHTINGALE**, of Chirton Grange, Tynemouth, in the County of North-  
umberland, and of Sackville Street, in the County of Middlesex, Surgeon  
Dentist, send greeting.

**WHEREAS** Her most Excellent Majesty Queen Victoria, by Her  
Letters Patent, bearing date the First day of December, in the year of  
10 our Lord One thousand eight hundred and seventy-one, in the thirty-  
fifth year of Her reign, did, for Herself, Her heirs and successors, give  
and grant unto me, the said Charles Nightingale, Her special licence  
that I, the said Charles Nightingale, my executors, administrators,  
and assigns, or such others as I, the said Charles Nightingale, my  
15 executors, administrators, and assigns, should at any time agree with,  
and no others, from time to time and at all times thereafter during  
the term therein expressed, should and lawfully might make, use, exer-  
cise, and vend, within the United Kingdom of Great Britain and Ireland,  
the Channel Islands, and Isle of Man, an Invention for "**AN IMPROVED**  
20 **MOUThPIECE FOR PROTECTING THE WEARER AGAINST ATMOSPHERIC INFLUENCES,**"  
upon the condition (amongst others) that I, the said Charles Nightingale,  
my executors or administrators, by an instrument in writing under my,  
or their, or one of their hands and seals, should particularly describe  
and ascertain the nature of the said Invention, and in what manner  
25 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 im-  
mediately after the date of the said Letters Patent.

**NOW KNOW YE**, that I, the said Charles Nightingale, do hereby  
declare the nature of my said Invention, and in what manner the same  
30 is to be performed, to be particularly described and ascertained in and  
by the following statement, reference being had to the accompanying  
Drawing forming part of this Specification :—

My said Invention relates to a plate or shield to be worn inside the  
lips to prevent inhalation through the mouth and compel the wearer to  
35 breathe naturally by inhalation through the nose.

The object of the said Invention is the protection of the mouth,



*Nightingale's Improved Respirator.*

throat, and lungs against cold or damp air, fog, or other noxious or unpleasant influences from which many persons suffer so severely. My improved mouthpiece is designed to obviate the necessity of the inconvenient and unsightly respirators now ordinarily worn, and as when used it is completely hidden by the lips of the wearer I call it an "invisible mouth protector" or "invisible respirator."

## DESCRIPTION OF THE DRAWING.

Figure 1 is a front view of my improved mouth protector; Figure 2 is a top view of the same; Figure 3 is a section on the line  $x, x$ , Figure 2; Figure 4 is a perspective view of the said mouth protector. 10

Figures 5, 6, 7, 8 are similar views illustrating a modification in the form of the said mouth protector.

Like letters indicate the same parts throughout the Drawing.

The said mouth protector or respirator consists of a single thin piece or plate  $a$  preferably made of gold or silver, though I may use vulcanite 15 or other materials suitable for the purpose. In Figures 1, 2, 3, 4, the said plate is shaped to fit comfortably and conveniently outside the teeth between the same and the lips, and when worn covers so much of the teeth and gums as would be visible with the mouth about half way open. But the shape of the said mouthpiece may be modified as shown 20 in Figure 5, 6, 7, 8. In this modification the part  $a^1$  of the plate fits between the top and bottom teeth, and a small portion  $a^2$  is turned down to fit over the latter.

While preventing altogether any inhalation through the mouth it is necessary that means should be provided for permitting exhalation 25 thereby, otherwise the wearer would be troubled by an accumulation of saliva and other inconveniences after using the protector a short time. For this purpose I form in the plate valves  $b$  which permit exhalation but not inhalation through the mouth. These valves are small tongues formed on the plate by punching or cutting the same in such a manner 30 that the said tongues permit the egress but not the ingress of air, or the said tongues may be soldered upon the plate over suitable apertures formed therein.

In Figures 5 to 8 I have shown the plates perforated with small holes  $d$  which serve instead of the valves  $b$ . 35



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*Nightingale's Improved Respirator.*

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In this manner I provide at a very slight cost a mouth protector which is free from all of the objections to the use of an ordinary respirator, and which by preventing the inhalation of cold or damp air through the mouth obviates much suffering in the teeth, gums, throat, air passages, 5 and lungs, and diminishes the loss of the caloric of the body. In order that the said mouth protector or respirator may be worn by a person sleeping, I make in it two small holes *c*, through which a thin piece of silk or other thread may be passed to secure the said plate.

In making my improved mouth protector the plate *a* is first stamped 10 out of plate or sheet gold, silver, or other metal or material capable of being bent, moulded, and otherwise worked by compression, hammering, burnishing, and other like operations known to practical dentists and gold and silversmiths. I use moulds properly shaped to give to the plate the convexity required to adapt it to the upper and lower teeth 15 and the configuration or contour of the lips. The valves *b* and holes *c* are then formed, and the plate is then again put in the dies; then it is burnished and finished on the edges, the tongues are set to give the required opening to the valves, and the mouth protector is then ready for use.

20 Having thus fully described my said Invention, and the manner of performing the same, I wish it understood that I claim, a mouth protector or respirator made of a single piece of metal or other material shaped to be worn inside the lips, and so constructed as to prevent inhalation through the mouth, as herein set forth.

25 In witness whereof, I, the said Charles Nightingale have hereunto set my hand and seal, this First day of June, in the year of our Lord One thousand eight hundred and seventy-two.

CHARLES NIGHTINGALE. (L.S.)

Witness,

30 W<sup>m</sup>. ROB<sup>t</sup>. LAKE,  
Patent Agent,  
8, Southampton Buildings,  
W.C.

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LONDON:

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,  
Printers to the Queen's most Excellent Majesty. 1872.

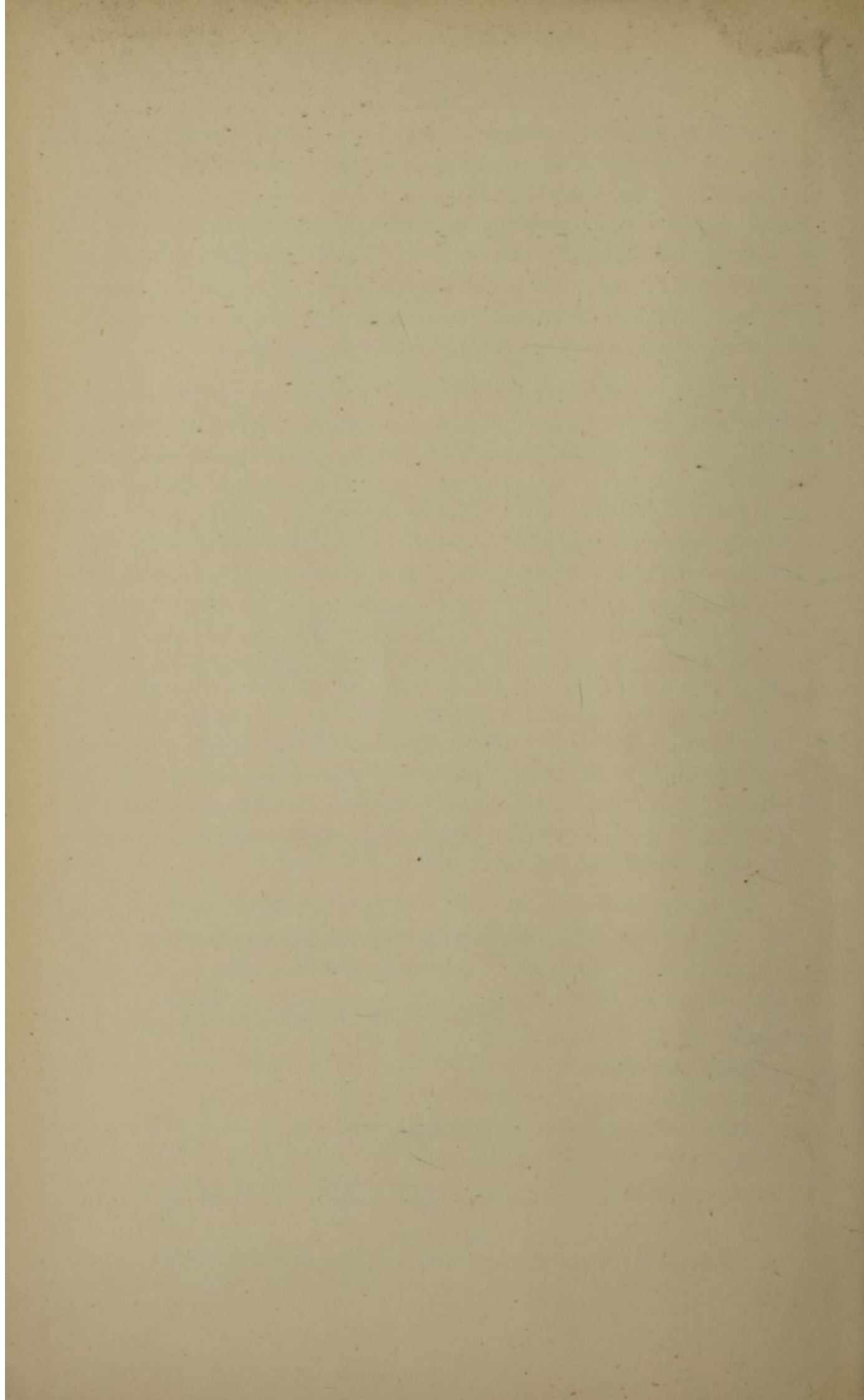
















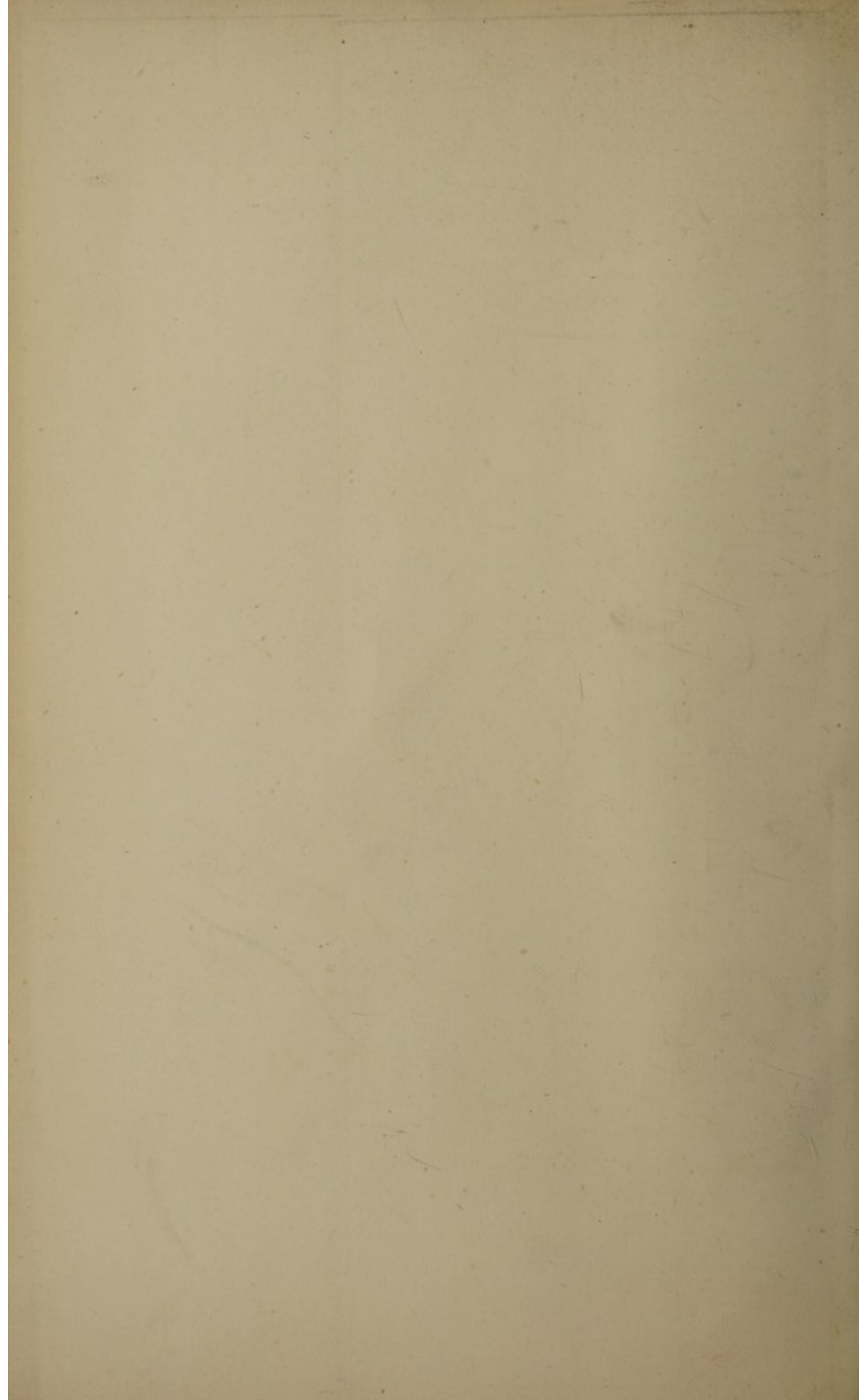




FIG. 1.



FIG. 2.

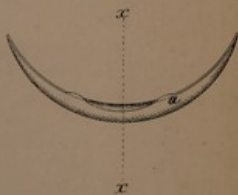


FIG. 4.



FIG. 3.



FIG. 7.



FIG. 5.



FIG. 6.

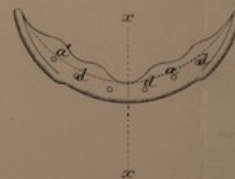


FIG. 6.



The filed drawing is partly colored.

Drawn on Stone by Malby & Sons

