

Specification of Frederick Charles Rein : apparatus for excluding sound from the ear.

Contributors

Rein, Frederick Charles.

Publication/Creation

London : Great Seal Patent Office, 1865 (London : George E. Eyre and William Spottiswoode)

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A.D. 1864, 1st DECEMBER. N° 3000.

SPECIFICATION

OF

FREDERICK CHARLES REIN.

APPARATUS FOR EXCLUDING SOUND
FROM THE EAR.

LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,

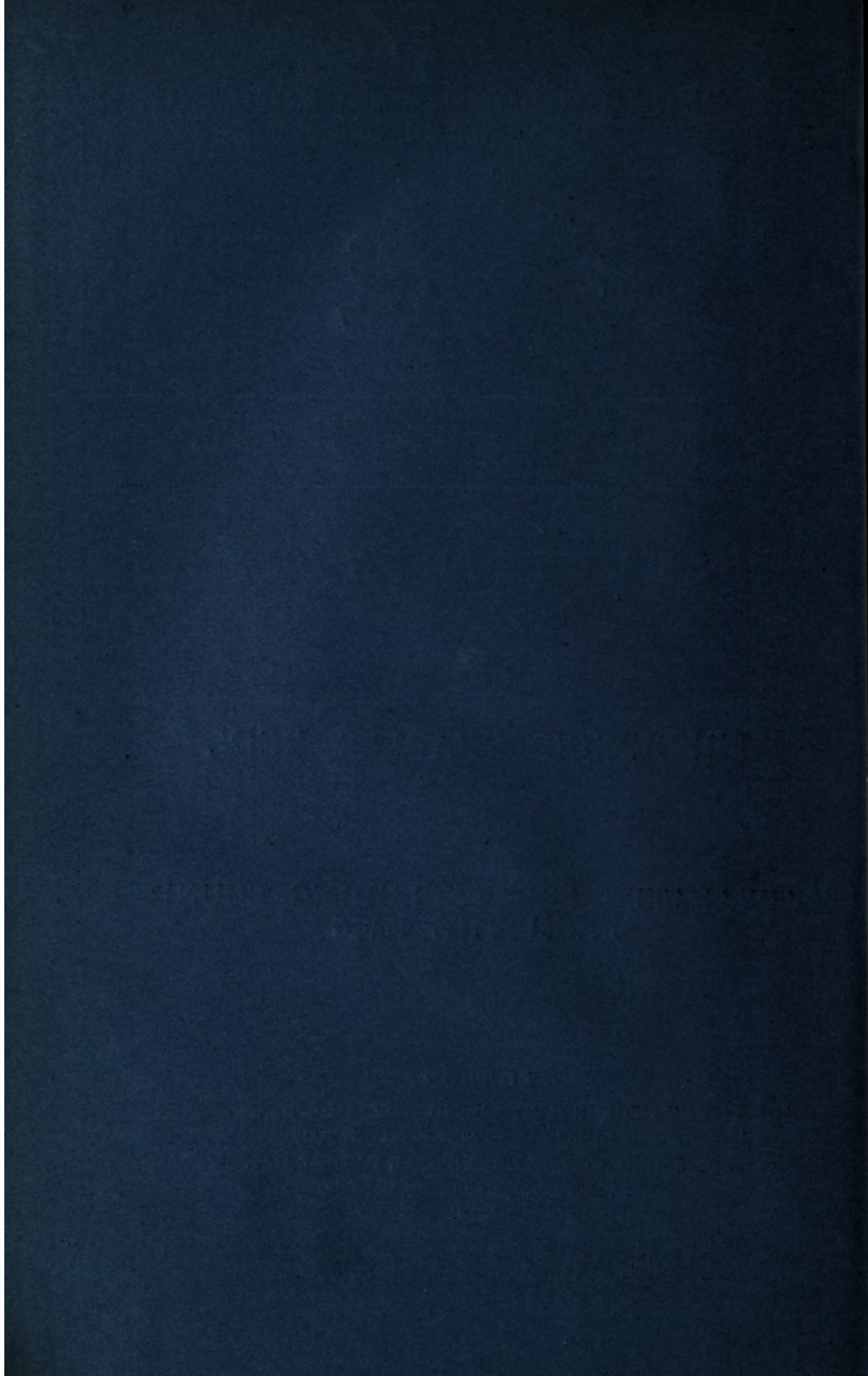
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PUBLISHED AT THE GREAT SEAL PATENT OFFICE,

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Price 8d.

1865.





A.D. 1864, 1st DECEMBER. N° 3000.

Apparatus for Excluding Sound from the Ear.

LETTERS PATENT to Frederick Charles Rein, of the Strand, in the County of Middlesex, Acoustical Instrument Maker, for the Invention of
“AN IMPROVED APPARATUS BY THE USE OF WHICH ANY SOUND WILL BECOME INAUDIBLE TO THE WEARER.”

Sealed the 12th May 1865, and dated the 1st December 1864.

PROVISIONAL SPECIFICATION left by the said Frederick Charles Rein, at the Office of the Commissioners of Patents, with his Petition, on the 1st December 1864.

I, FREDERICK CHARLES REIN, of the Strand, in the County of Middlesex, Acoustical Instrument Maker, do hereby declare the nature of the said Invention for “AN IMPROVED APPARATUS BY THE USE OF WHICH ANY SOUND WILL BECOME INAUDIBLE TO THE WEARER,” to be as follows:—

The object of my Invention is entirely (or as nearly so as possible) to exclude sound from the drum or inside of the ear when a person desires so to do. I make a form or plug to fit in (or nearly so) the inside of the ear, pressing also by a species of flange on the edge of the “tragus” thereof; the plug and flange may (or may not be) of one piece, and may be made of any suitable material, I prefer caoutchouc, and may be made hollow and filled with air, with cotton, or any soft material or substance. This form or plug is attached to a plate which covers or partially covers the ear, from whence (being fitted to the plate) passes a sliding or solid spring which goes over or round the

Rein's Improved Apparatus for Excluding Sound from the Ear.

head, or under the lower jaw or otherwise, and on the other end of the spring the apparatus of plate and plug is of course repeated to act upon the other ear.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said Frederick Charles Rein, in the Great Seal Patent Office 5 on the 26th May 1865.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, FREDERICK CHARLES REIN, of the Strand, in the County of Middlesex, Acoustical Instrument Maker, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters 10 Patent, bearing date the First day of December, in the year of our Lord One thousand eight hundred and sixty-four, in the twenty-eighth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Frederick Charles Rein, Her special licence that I, the said Frederick Charles Rein, my executors, administrators, and assigns, or such others 15 as I, the said Frederick Charles Rein, my 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, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an 20 Invention for "**AN IMPROVED APPARATUS BY THE USE OF WHICH ANY SOUND WILL BECOME INAUDIBLE TO THE WEARER,**" upon the condition (amongst others) that I, the said Frederick Charles Rein, 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 25 what 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 Frederick Charles Rein, 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 Sheet of Drawing forming part of this my Specification, and to the figures and letters of reference placed thereon.

The object of my Invention is to enable an individual to entirely (or as 35 nearly so as possible exclude sound from the drum of the ear when he (or she) desires so to do, as when such individual is travelling by railway, and in

Rein's Improved Apparatus for Excluding Sound from the Ear.

numerous other cases where continuous crashing or other unpleasant noise may be distressing. In order to effect my object I make a form or plug similar to those shewn in Figures 1 and 2 of the Drawing, which shews that part of the plug to be passed into the cavity of the ear. These plugs are composed of india-rubber or any elastic or semi-elastic substance which can be manufactured so as to assume and retain the form required, except in so far that on pressure they yield so as to fully occupy the cavity of the ears they are intended to fill. Figure 1 is the plug intended to occupy the cavity of the right ear immediately under the "tragus" thereof, and Figure 2 that of the left ear. I color or enamel these plugs to the color of the skin so that they may be less apparent when placed in the ears. These plugs may be used alone and will retain their position if merely pressed by the finger into the cavities of the ears, and where softening the effect of sound be all that is desired they will effectually serve such purpose, but where a more effectual stoppage of sound is desired they may be assisted by any of the means shewn in the Drawing, or by any other means that I may find applicable for obtaining the pressure necessary for such purpose. For example, I attach the plugs each to a circular plate by means of a pin or spindle, (which allows the plug free play) passing through the ends of a steel spring, the centre of the plate, and into but not through the plugs as shewn at Figure 3, where *a, a*, denote plugs; *b, b*, circular plates; *c, c*, pins; *d*, spring. On passing the spring over the head or under the lower jaw—(as may be preferred) the plugs are made to enter the cavity of each ear, being pressed inwards by the action of the spring *d* upon the plates *b, b*, and to further assist the elastic or semi-elastic plugs in stopping or excluding sound. I make the plates of the size, and following the shape of the ear as shewn at Figure [4 which represents a plug attached to the under side of a plate, (which may be made of any suitable material) the spring to be fitted as mentioned in reference to Figure 3; or I use a spring unattached to any plate but merely passing from the jaw, or over the head, or at the back of the neck as may be preferred, so that its ends (which are smoothed or rounded off) press upon the plugs which are already in their places. It will be obvious that if the plugs alone are sufficient to soften sound, the pressure of the ends of the independent spring will serve to exclude sound altogether (or nearly so.) I sometimes fill these plugs with air and also the plug of other form shewn Figures 6 and 7; Figure 5 is intended to represent the interior or inside of a hollow plate lined with silk at *e, e*, and padded with velvet at *f, f*; two strips of elastic *g, g*, are fitted in its centre, and when in use the plug shewn at Figures 6 and 7 is placed in the hollow *e, e*, of the plate and kept in position by the elastics *g, g*, which pass over it on each side

Rein's Improved Apparatus for Excluding Sound from the Ear.

of the nipple *h*, resting on the plug at *i*, *i*. A sliding or solid spring *d* attached to the outside of this plate passes (as at Figure 3) to another plate fitted in a similar manner. The two plates attached to each other by the spring being placed one on and entirely covering each ear, the nipple of the plug passing into the cavity thereof, and being firmly pressed on and kept in position by the yielding of the padding *f*, *f*, under the action of the spring *d*, which may as aforesaid pass under the jaw, over the head, or behind the neck of the wearer, will thus effectually deaden or exclude sound from passing to the drum of the ear; Figure 8 shews the interior of a hollowed plate *j*, similar to Figure 5, but not cushioned or padded, and Figure 9 a side view thereof; 10 in this apparatus I use a plug *k*, formed as usual of elastic or semi-elastic material, but mounted on a spiral spring *l*, and attached to and through the plate, the spring *d* passes from the plate shewn to its fellow, and the action is precisely the same as that described in relation to Figures 3 and 5 of the Drawing. In conclusion I would wish it to be distinctly understood that 15 the forms or plugs intended to fill the cavity of the ear are made of any suitable material, such as caoutchouc, and may be made hollow and filled with air, with cotton, or any soft material or substance, and that the spring I make to keep the plugs or plates in position is made in one piece, or in two or more pieces with slides and stops according to the nature of the apparatus to 20 be used.

Having now described the nature of my Invention, and shewn means by which it may be carried into practical effect, I declare that I do not confine myself to the precise details herein given, or to the Diagrams or Figures shewn in the Sheet of Drawing, as modifications may be made to suit the 25 circumstances of particular cases without departing from my Invention, and I claim the exclusive use of forms or plugs made of elastic or semi-elastic material to be placed in the cavities of the ears, either alone or supported or assisted by a spring or plates, and spring for the purpose of rendering sound partially or wholly inaudible to the wearer. The whole essentially as herein- 30 before described and illustrated on the accompanying Sheet of Drawing.

In witness whereof, I, the said Frederick Charles Rein have hereto set my hand and seal, this Twenty-third day of May, in the year of our Lord One thousand eight hundred and sixty-five.

FREDERICK CHARLES REIN. (L.S.) 35

LONDON:

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1865.

A.D. 1864. DEC. 1. N^o 3000.
REIN'S SPECIFICATION.

FIG. 3.

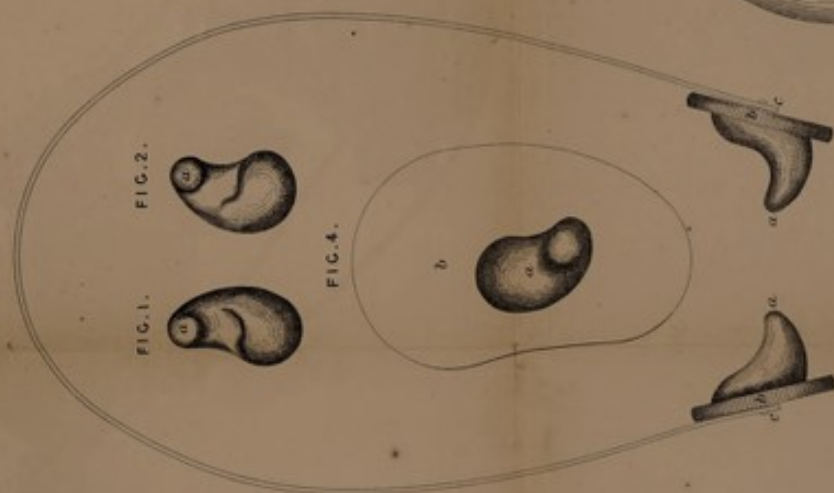


FIG. 5.

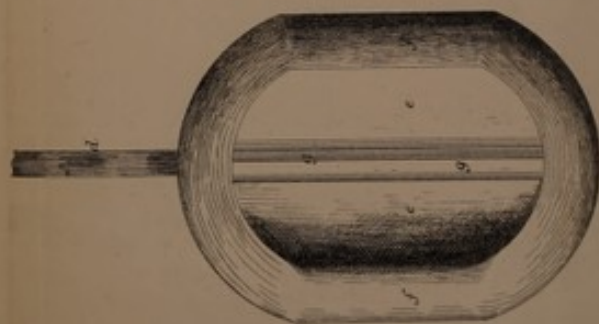


FIG. 7.



FIG. 6.



FIG. 8.

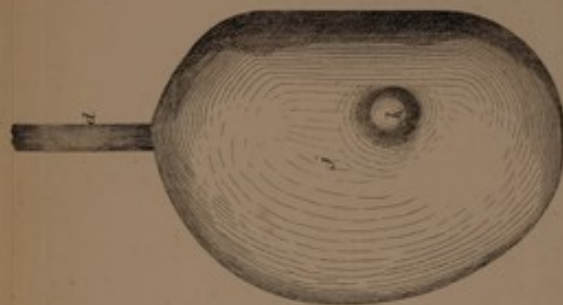


FIG. 9.



The filed drawing is not colored.

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Drawn on Stone by May & Sons.

