

(No Model.)

R. NAGLER.
RESPIRATOR.

No. 535,718.

Patented Mar. 12, 1895.

Fig. 1.

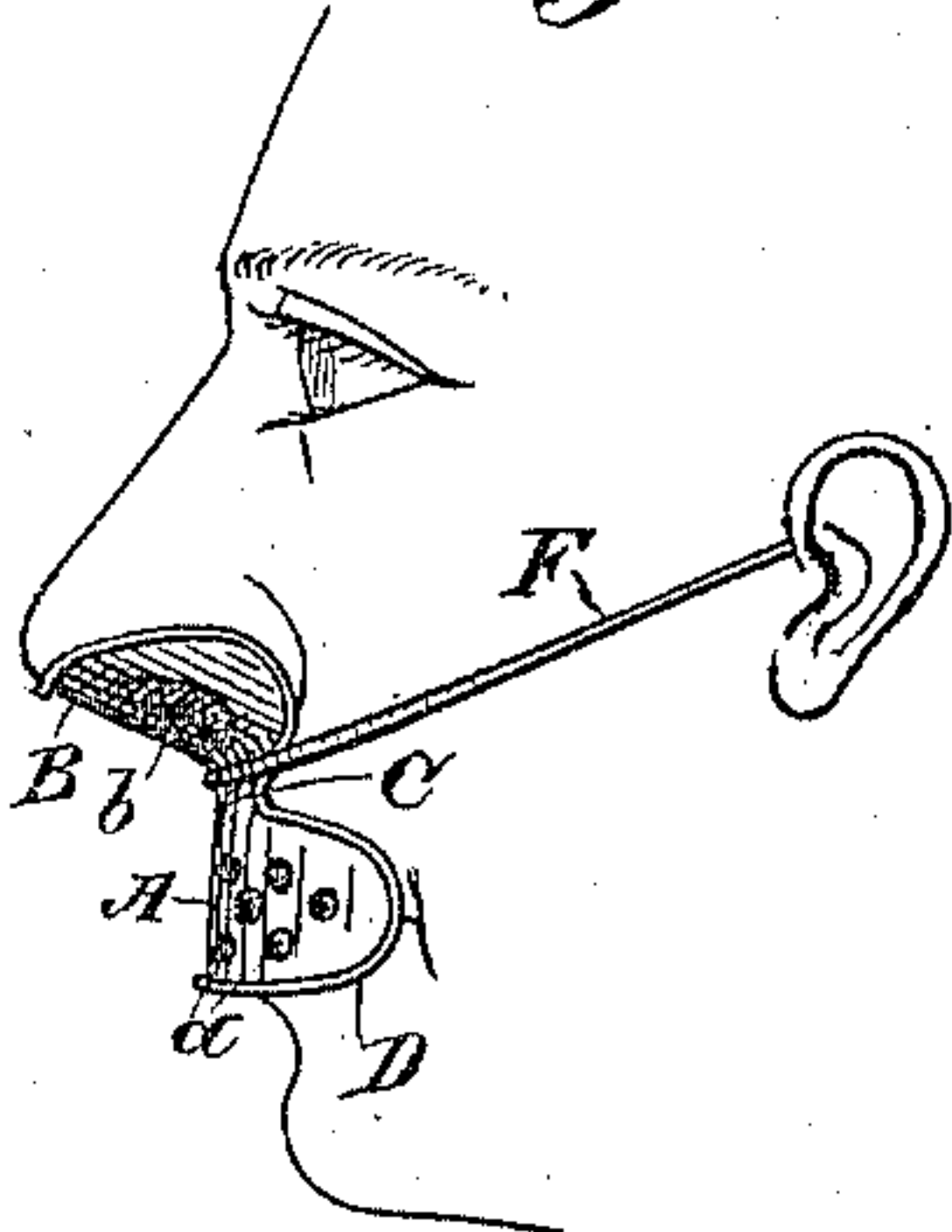


Fig. 2.

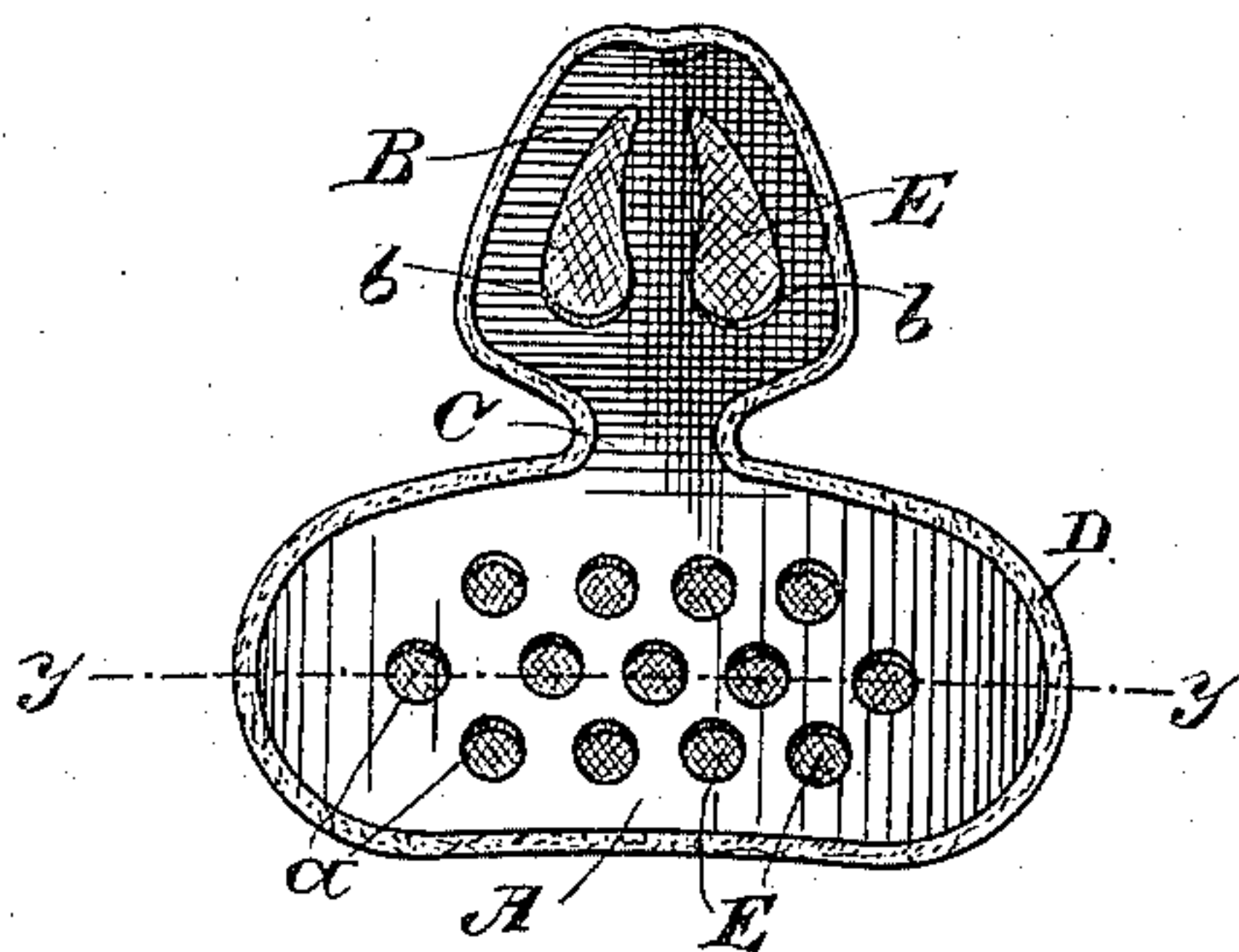


Fig. 3.

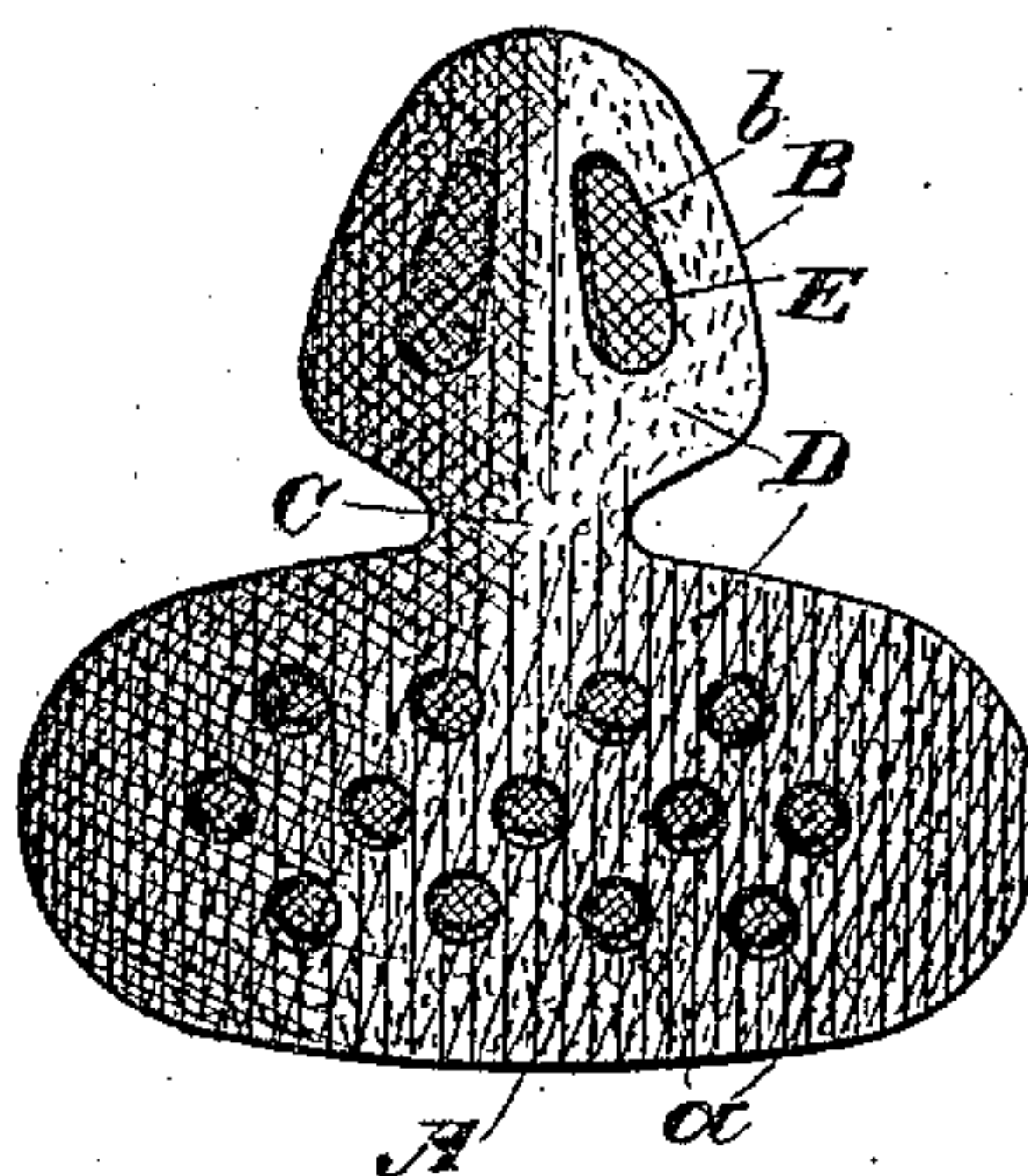
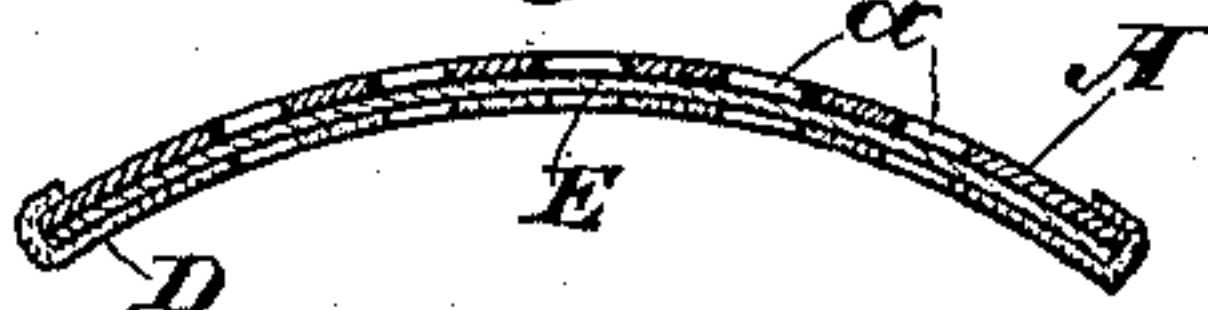


Fig. 4.



Witnesses,

J. H. Morse
H. F. Aschbeck

Inventor,

Robert Nagler
By Dewey & Co. atty

UNITED STATES PATENT OFFICE.

ROBERT NAGLER, OF SAN FRANCISCO, CALIFORNIA.

RESPIRATOR.

SPECIFICATION forming part of Letters Patent No. 535,718, dated March 12, 1895.

Application filed November 15, 1894. Serial No. 528,899. (No model.)

To all whom it may concern:

Be it known that I, ROBERT NAGLER, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Respirators; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to an improved device of that class known as "respirators."

It consists in certain details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 shows the application of my device. Fig. 2 is an exterior view of my respirator. Fig. 3 is an interior view. Fig. 4 is a section on line $y-y$ of Fig. 2.

The object of my invention is to provide a light rigid device properly shaped to fit over the mouth and nostrils of the wearer, with a means for detachably applying a suitable porous material through which respiration will take place, and fitted between an outer shell and an inner covering, perforations through the outer shell corresponding with the apertures of the nostrils and the mouth, and an inner flexible lining impervious to air adapted to rest upon the edges of the nostrils and over the mouth, and perforated to correspond with the outer plate, together with an elastic or other attachment for holding the whole in place, so that the air which enters the lungs may be purified from injurious particles which may be floating in the atmosphere, or it may be medicated so that a treatment for lung and throat troubles can be applied in this manner.

A B is a metallic or other light rigid plate, the lower portion A being made of sufficient length transversely to cover the mouth of the wearer, and the upper portion B of such shape and curvature, as shown, as to fit the lower portion of the nose and cover the nostrils, resting against the cartilages and periphery thereof.

Between the two parts A and B is a narrow neck C, and this neck is so bent that while the portion A rests fairly over the mouth, the curvature of the neck is such that the portion B will also properly cover the nostrils. This plate is made of a material which

may be bent and changed in form, when it does not exactly fit the mouth and nostrils, until it will fit them properly. Through the portion A which covers the mouth, a series of perforations is made, as shown at a , and through the portion B, which covers the nostrils, are made openings b which correspond approximately in shape with the openings of the nostrils.

D is an interior lining which may be made of light silk, thin rubber, or other suitable material impervious to air. The edges of this material are preferably turned over and lapped over the periphery of the plate A, B, C, leaving a space between the two for the introduction of a material E which is pervious to air. This material may be any suitable porous substance of sufficient body and thickness, and it may be introduced by removing the inner impervious covering. This porous material is of essentially the same shape of the outer plate and inner impervious lining, and is of such a size that it will be held securely in place when the inner lining is attached to the outer plate. This inner body being thus removable may be taken out and changed as often as may be necessary.

F is an elastic strap or band of other material, which may either be permanently attached, or being endless, may be placed around the neck or small portion C, and passing over the ears and behind the head of the wearer, it will hold the device closely against the mouth and nostrils.

For ordinary purposes, when the wearer is working in an atmosphere which is loaded with dust or other injurious or noxious substances, the intermediate porous material E will serve to arrest these substances on its outer surface and prevent their entering the nostrils and mouth while allowing a free passage of air. For purposes of medication or treatment of lung or throat troubles, or for strengthening inhalation, this material may be saturated through the openings from the outside, with any desired or prescribed substance, the vapor of which will be beneficial for the treatment of such diseases, and in cases where the atmosphere may be loaded with germs of disease or those otherwise injurious, any suitable germicide may be employed to saturate this porous filling.

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

1. A respirator comprising a plate having
5 a portion curved to fit the mouth, and a portion at approximately right angles thereto and curved to fit the nose, and joined to said mouth portion by an intervening neck of small diameter, said mouth and nose portions
10 being perforated; a removable porous material shaped like and fitted to the plate and means for confining it in place.

2. A respirator consisting of a plate of bendable material comprising a portion curved to
15 fit the mouth, and a portion at approximately right angles thereto and curved to fit the nose, and joined to the mouth portion by an intervening neck portion of small diameter, an in-

ner flexible lining attached at the edges to the metal plate by lapping over the same, and
20 shaped like said plate, and impervious to air, said lining having perforations made in it to correspond with similar openings in the mouth and nose portions of the bendable plate, and
25 a removable fibrous or porous material interposed between said plate and inner lining and capable of absorbing a solution or chemical to act as a germicide or for the treatment of diseases of the throat and lungs, and to check
30 particles floating in the air when breathing.

In witness whereof I have hereunto set my hand.

ROBERT NAGLER.

Witnesses:

S. H. NOURSE,
WM. F. BOOTH.