Sept. 23, 1941. J. B. BIEDERMAN 2,256,997

RESPIRATORY FILTER

Original Filed Nov. 30, 1939

Fig 1.

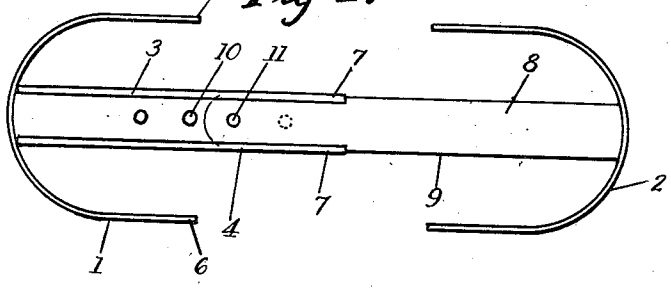


Fig 2.

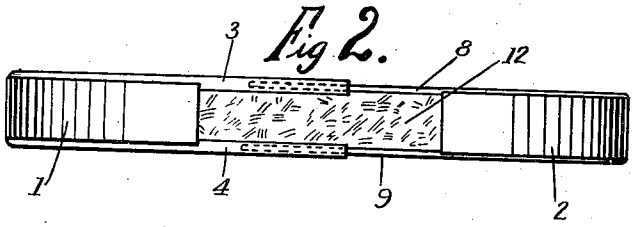


Fig 3.

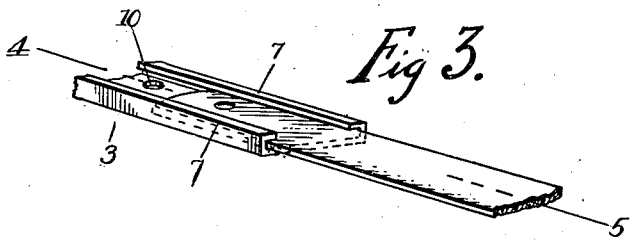


Fig 4.

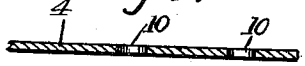


Fig 5.

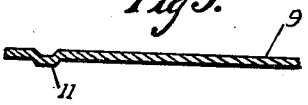


Fig 6.

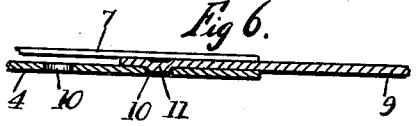
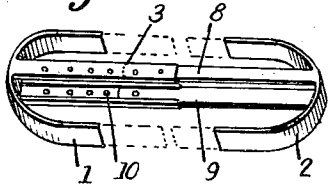


Fig 7.



Inventor.
Joseph B. Biederman
By Arthur N. Ewald,
Attorney.

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UNITED STATES PATENT OFFICE

2,256,997

RESPIRATORY FILTER

Joseph B. Biederman, Cincinnati, Ohio

Original application November 30, 1939, Serial No. 306,863. Divided and this application June 11, 1940, Serial No. 339,926

4 Claims. (Cl. 128—148)

The present invention relates to respiratory filters of the type adapted to be placed inside the nostrils of the patient, where they may retain a medicament which is inhaled by the user.

In the treatment of respiratory diseases, such as asthma, hay fever and similar ailments, it is desirable that the patient be provided with a filter and frequently an inhalant which is constantly available so as to filter and medicate the breath of each inhalation. For this purpose various masks and similar devices have been provided, but such nasal or facial masks are unsightly and the patient does not readily accustom himself to their use, especially in public places. For this reason the present invention is directed to a filter which may be inserted into the nostril where it is entirely concealed, thus relieving the user of all embarrassment, while at the same time giving him the full benefit of such use at all times. In view of the fact, however, that individual noses differ in size and the nostrils differ accordingly, it has heretofore been necessary to provide numerous sizes of such filters in order to meet the various demands. My present device adapts itself readily to noses of various sizes and therefore it becomes unnecessary for the dealer to carry an assortment of sizes of the device. The principal object is therefore to provide a respiratory filter of the type mentioned which adapts itself readily to noses of varying sizes.

Other objects of the invention will appear from the following detailed description thereof.

This application is a divisional application covering one form of the device disclosed and claimed in my original application, Serial No. 306,863, filed November 30, 1939.

In the drawing:

Figure 1 is a plan view of a filter constructed in accordance with this invention.

Figure 2 is a side elevation of said filter.

Figure 3 is a perspective showing the interlocking telescoping members.

Figures 4 and 5 are sectional views of the respective interlocking members.

Figure 6 is a sectional view showing the interlocking members in interlocked position.

Figure 7 is a perspective illustrating my invention.

The numerals 1 and 2 indicate respectively the end members entering into the construction of my new adjustable respiratory filter. The said end members are substantially semi-circular in plan as shown in Figure 1 and may be constructed of any non-corrosive metal such as silver or any other suitable material. The end member 1 is provided with two arms 3 and 4 respectively which extend inwardly from the upper and lower edges of the end member in diametric relation to said end member, and in substantially parallel relation to each other. The arms 3 and 4 extend inwardly considerably beyond the ends 5 and 6 of the end member 1. The arms 3 and 4 are provided with lateral flanges 7—7 which form grooves or channels within which arms 8 and 9 similarly carried by the end member 1 are arranged to telescope. The arms 3 and 4 are provided with a series of perforations or depressions 10 within any of which bosses or buttons 11 on the arms 8 and 9 respectively are adapted to engage.

As will be seen from the foregoing description the end members are adjustably secured together by telescoping the arms 8 and 9 of the member 2 into the groove formed by flanges 7 on the respective arms 3 and 4 of end member 1. The desired adjustment, that is relationship of the end members 1 and 2 to each other, is secured by the engagement of the studs 11 in the suitable perforations or depressions 10. It will thus be seen that the relationship of the end members 1 and 2 may be so adjusted with respect to each other that the device is adapted to fit snugly into nostrils of varying sizes.

The arms 3 and 4 and 8 and 9 when in telescoping engagement form in connection with the end members 1 and 2 a retaining device, mostly open so as not to retard breathing, within which a pad 12 containing a suitable medicament may be held.

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

1. A respiratory filter comprising separate unitary end members adapted when assembled to form a substantially elliptical element to fit into the nostril of a user, arms carried by said end members and adapted to secure a pad therein, said arms extending inwardly from said members, and the arms of the respective members being adapted to overlap when said members are assembled, means whereby the arms of the respective end members are adapted to fit telescopically together to secure said members together, and means for securing the telescopic adjustment of said arms.

2. A respiratory filter comprising separate unitary end members adapted when assembled to form a substantially elliptical element to fit into the nostril of a user, arms carried by said end members and adapted to secure a pad therein, said arms extending inwardly from said members,

and the arms of the respective members being adapted to overlap when said members are assembled, and flanges on the arms carried by one of said members forming channels adapted to receive telescopically the arms on the other member whereby said end members are adapted to fit telescopically together.

3. A respiratory filter comprising separate unitary end members adapted when assembled to form a substantially elliptical element to fit into the nostril of a user, arms carried by said end members and adapted to secure a pad therein, said arms extending inwardly from said members, and the arms of the respective members being adapted to overlap when said members are assembled, flanges on the arms carried by one of said members forming channels adapted to receive telescopically the arms on the other member whereby said end members are adapted to fit telescopically together, and interlocking means on the respective arms for securing the telescoping adjustment of said arms.

4. A respiratory filter comprising separate unitary end members adapted when assembled to form a substantially elliptical element to fit into the nostril of a user, arms carried by said end members and adapted to secure a pad therein, said arms extending inwardly from said members, and the arms of the respective members being adapted to overlap when said members are assembled, flanges on the arms carried by one of said members forming channels adapted to receive telescopically the arms on the other member whereby said end members are adapted to fit telescopically together, and studs on the fingers of one of said arms adapted to engage in either of a series of perforations on the other of said arms whereby the telescopic adjustment of the arms may be secured.

JOSEPH B. BIEDERMAN.