Aug. 26, 1947. J. B. BIEDERMAN 2,426,161

NASAL DEVICE

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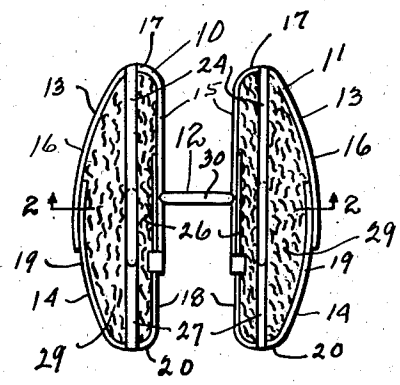


Fig. 1.

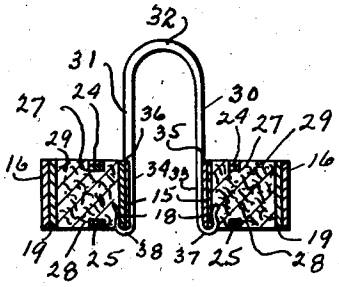


Fig. 2.

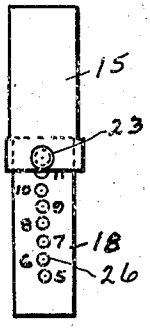


Fig. 3.

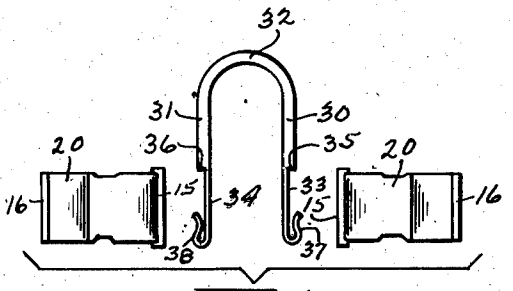


Fig. 4.

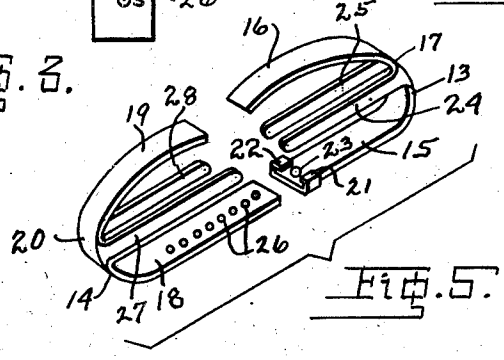


Fig. 5.

INVENTOR.
JOSEPH B. BIEDERMAN

BY

Joseph A. Rave
Attorney

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NASAL DEVICE

Joseph B. Biederman, Cincinnati, Ohio

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3 Claims. (Cl. 128—148)

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This invention relates to improvements in a nasal device, that is, a device to be inserted within the nostrils of a person suffering from respiratory disorders, such for example as hay fever.

Devices of the kind forming the subject matter of this invention are adapted to filter out pollens and other particles in the air and supply the air entering the user's head with a medical vapor. In the past, difficulty has been encountered in the dislodgment of the device after being placed in the user's nostril. At the same time these devices, while adjustable to different size nostril openings, were disturbed in normal use, requiring a readjustment of the parts. By the present invention, the filtering devices are definitely held against inadvertent maladjustment, and are prevented from displacement in the nostril.

It is the principal object of this invention to provide in a nasal device of the kind here disclosed, means for linking the filtering elements in the respective nostril openings to one another against independent rotation and dislodgment.

Another object of this invention is the provision of a removable device or link for accomplishing the foregoing object.

Another object of this invention is the provision of a removable member or link which not only prevents the dislodgment of the filtering device in each nostril, but secures each device in its individual adjustment to prevent maladjustment thereof after it has been arranged to fit an individual user's nostril opening.

Other objects and advantages of the present invention should be readily apparent by reference to the following specification considered in conjunction with the accompanying drawings forming a part thereof and it is to be understood that modifications may be made in the exact structural details there shown and described, within the scope of the appended claims, without departing from or exceeding the spirit of the invention.

In the drawings:

Fig. 1 is a plan view of the device of this invention ready for use.

Fig. 2 is a transverse sectional view taken on line 2—2 on Fig. 1.

Fig. 3 is a side elevation of one of the filtering devices.

Fig. 4 is an end elevation of the several elements forming the complete nasal filtering device.

Fig. 5 is a perspective view of the elements of one filtering assembly.

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Throughout the several views of the drawings, similar reference characters are employed to denote the same or similar parts. The nasal filtering device of this invention comprises three separate assemblies; the left nasal filter 10, the right nasal filter 11, and the connecting or bridging piece or link 12. The nasal filters 10 and 11 are each identical in construction, and it is deemed sufficient if but one of them be described in detail.

The nasal filter 10, see principally Fig. 5, comprises a pair of substantially U-shaped elements 13 and 14 with said element 13 comprising arms 15 and 16 connected to one another by the rounded base 17 while the element 14 has similar arms 18 and 19 connected to one another by the rounded base 20. The arm 15 of the element 13 is provided at its free ends with superimposed fingers 21 and 22 forming between them and the arm 15 a passageway. The arm 15 between the fingers 21 and 22, is provided with an inwardly projecting protuberance or lug 23. In addition, the element 13 has projecting longitudinally thereof, from opposite sides of the base 13, fingers 24 and 25, and which fingers, see Fig. 2, lie between the arms 15 and 16. The arm 18 of the element 14 is provided longitudinally thereof with a plurality of inwardly projecting sockets 26, which are adapted respectively to receive the protuberance or lug 23. In other words, the arm 18 is adapted to be inserted in the space provided below the fingers 21 and 22, wherefore the elements 13 and 14 telescope relative to one another and the various positions of adjustment is obtained by the interengagement of lug 23 with the sockets 26. This telescoping of the elements 13 and 14 causes the arm 16 of element 13 to be exteriorly of the arm 19 of element 14, as illustrated clearly in Fig. 1. The element 14, like element 13, has, projecting from opposite points of the rounded base 20, fingers 27 and 28.

The fingers 24, 25, 27, and 28 cooperate with one another and with the bounding arms of the elements to hold a fibrous pad 29 which acts as a filter for the air drawn into the nostril by the user, and at the same time this pad may be saturated with a medicine picked up by the air as it passes therethrough for medicating the respiratory organs and the membranes thereof.

As was noted above, the filtering devices 10 and 11 are connected or linked together by link or bridging piece 12 which, see Fig. 4, is substantially U-shaped in elevation and comprises arms 30 and 31 joined by the base member 32. The lower ends of the arms 30 and 31 are flattened as

at 33 and 34 providing shoulders 35 and 36 at the upper ends. The lower ends of the arms are turned on themselves to provide hooks 37 and 38.

The bridging piece is formed by resilient wire, wherefore the hooks 37 and 38 have yielding properties. In use and after the elements 13 and 14 of each filtering device 10 and 11 are properly adjusted, telescopically, the overlapped portions of arms 15 and 16 are inserted respectively in the hooks 37 and 38. The shoulders 35 and 36 are spaced from the hooks 37 and 38 a distance substantially equal to the height of the filter elements 13 and 14, wherefore the lower edge of said elements engage the bottoms of the hooks while the upper edge of said elements engage the shoulders.

By this construction the clamping action of the hooks 37 and 38 adequately prevents inadvertent telescoping or extension of the elements 14 and 15 since it is necessary to remove the bridging piece 12 if any adjustment of these elements is necessary.

The bridging piece 12 at the same time prevents any rotative movement of either filtering device 10 or 11, since movement of one will tend to carry with it a corresponding movement of the other, prohibited by the nostril, and therefore insuring the filtering device as a whole remaining in any position of adjustment.

What is claimed is:

1. In a nasal device the combination of a pair of nasal filter devices, a detachable U-shaped link for securing said filtering devices to one another in spaced apart relation, the free ends of the respective legs of said link being provided with resilient hooks adapted to engage over the edges of the respective filtering devices, and shoulders on said legs disposed to engage edges of said filtering devices opposite said hooks whereby said link is adjustable longitudinally of said filtering devices and said filtering devices are prevented from rotary movement with respect to said link.

2. In a nasal device the combination of a pair of nasal filter devices, each of which comprises a pair of telescoping elements, a detachable U-shaped link for securing said filtering devices to one another in spaced apart relation, the free ends of the respective legs of said link being provided with resilient hooks adapted to engage over edges of the telescoping portions of the respective filter devices, and shoulders on said legs disposed to engage edges of the telescoping portions of said filter devices opposite said hooks, whereby said link is adjustable longitudinally of said filter devices and said filter devices are prevented from rotary movement with respect to said link.

3. In a nasal device the combination of a pair of nasal filter devices, each of which comprises a pair of telescopically adjustable half oval elements, one of the legs of one element of each pair being provided with a protuberance or lug, and one of the legs of the remaining element of each pair being provided with a plurality of means for engaging said protuberance or lug to secure the said elements in each pair in adjusted positions, and a detachable U-shaped link for securing the filter device in spaced apart relation, said link comprising hooks at the free ends of the respective legs of said link adapted to engage over edges of the telescoped legs of the respective elements, and shoulders on said legs disposed to engage over edges of the telescoped legs of the respective elements at points opposite to that engaged by the hooks.

JOSEPH B. BIEDERMAN.

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