Jan. 9, 1923. 1,441,906.

H. BEALS.

NOSTRIL PROTECTOR.

FILED DEC. 2, 1921.

Fig. 1.

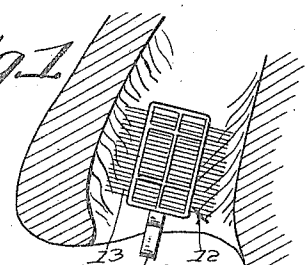
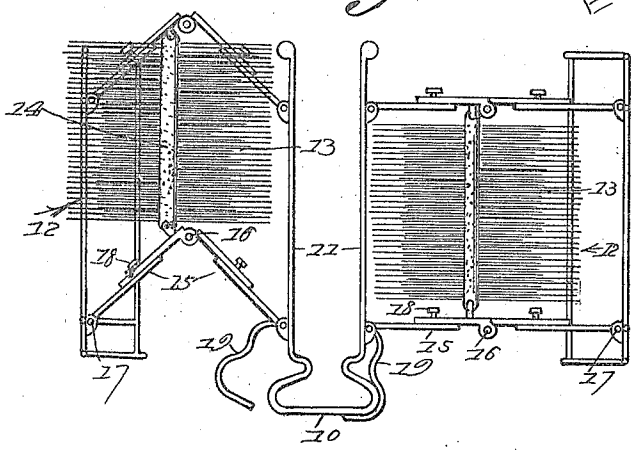


Fig. 2.



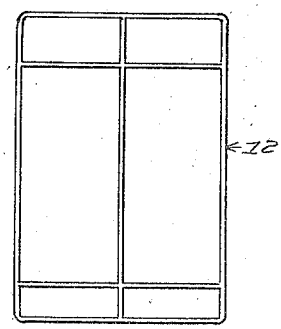


Fig. 4.

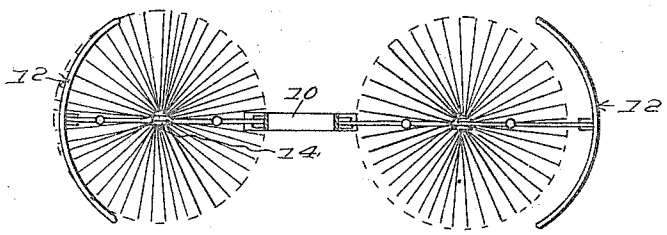


Fig. 3.

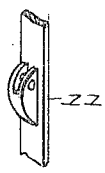


Fig. 5.

Inventor

Henry Beals,

By E. Hume Talbert

Attorney

Patented Jan. 9, 1923. 1,441,906

UNITED STATES PATENT OFFICE.

HENRY BEALS, OF NOBLESVILLE, INDIANA.

NOSTRIL PROTECTOR.

Application filed December 2, 1921. Serial No. 519,449.

To all whom it may concern:

Be it known that HENRY BEALS, a citizen of the United States of America, residing at Noblesville, in the county of Hamilton and State of Indiana, has invented new and useful Improvements in Nostril Protectors, of which the following is a specification.

The object of the invention is to provide a simple and efficient means for protecting the nostrils of workmen engaged in occupations which expose them to flying dust as a means of preventing the breathing of the dust to the injury of the nasal throat passages and the lungs; and more particularly to provide a device for this purpose which can be applied and worn with convenience and without involving any obstructive or embarrassing projection from the face and without causing inconvenience or distress or interfering with the view of the wearer, and furthermore which will not restrict the freedom of the breathing operation but which on the other hand may be capable of adjustment to suit the nostrils of different sizes and to afford any required or preferred freedom of the breathing operation even in excess of that which is normal to the wearer of the device; and with this object in view the invention consists in a construction and combination of parts of which a preferred embodiment is shown in the accompanying drawings, wherein:

Figure 1 is a side view of the device applied in the operative position.

Figure 2 is an enlarged front view of the same showing one of the members or units in the contracted and the other in the expanded position.

Figure 3 is a plan view of the same showing the parts in the positions indicated in Figure 2.

Figure 4 is an elevation of one of the shoes.

Figure 5 is a detail view showing a joint such as that used between the expanders and the shoes.

The device contemplates two members or units for respective insertion into the nostrils and connected by a yielding bow 10 similar to that employed in connection with eye glasses to permit of relative angular and lateral adjustment of the units or members to adapt them to the relative positions of the nostrils of the wearer, each of said units or members consisting essentially of oppositely disposed inner and outer shoes 11 and 12 for respective contact with the walls of the nostril at its inner and outer sides, an expander for controlling the relative positions of said shoes, and a brush 13 of which the bristles are disposed radially from and are carried for example by a central core 14 and which serve to span the opening of the nostril to interrupt the passage therethrough of dust or other solid matter without substantially or materially interfering with the circulation of air in connection with the breathing operation.

In the construction illustrated the expander consists of spaced toggles 15 of which the arms are pivotally connected at their inner ends as shown at 16 and at their outer ends are pivoted to the shoes as shown at 17, each of said arms being of extensible construction with the elements thereof overlapped and secured in adjusted relation by a set screw 18. The breaking and aligning of the toggles serve as will be obvious to contract and expand the unit or member so that being introduced into the nostril in the contracted condition it may be expanded to bring the shoes into bearing contact with the walls of the nostril to hold the device in place, and the adjustment of the lengths of the arms of the toggles serves to adapt each unit or member to different sizes of nostrils and to provide for any desired abnormal expansion of the notrils which may be required to give additional freedom of breathing, and may serve moreover as the means of causing a greater expansion of a nostril at the outer end than at the inner end of the device, should such an arrangement be preferred.

In the construction illustrated the core 14 of the brush, which may be of cork or other relatively light material is supported by the toggles near the joints at the inner ends of the arms thereof, and the shoes at the inner sides of the members preferably consist of single rods as shown formed as extensions of the bow 10 while the shoes at the outer sides of the members consist of open frames particularly illustrated in Figure 4 and formed of wire or like material to the end that they do not cover any considerable portion of the surface of the nostril.

As a means of swinging the toggles to expand or collapse the units or members operating arms 19 conforming in general contour to the bow 10 are connected with the inner arms of the toggles arranged adjacent to the

bow, so as to be readily accessible to the operator.

Having described the invention, what is claimed as new and useful is:—

1. A nostril protector having expansible and collapsible units or members for insertion in the nostrils and carrying radially fibred brushes.

2. A nostril protector having expansible and collapsible units or members for insertion in the nostrils and carrying brushes having a central core from which yielding fibres project in radial relation.

3. A nostril protector having expansible and collapsible units or members for insertion in the nostrils, each having oppositely disposed shoes connected by toggles.

4. A nostril protector having expansible and collapsible units or members for insertion in the nostrils, each having oppositely disposed shoes of which one consists of an open wire frame.

5. A nostril protector having expansible and collapsible units or members for insertion in the nostrils, each of which is provided with oppositely movable shoes connected by toggles of which the arms are of adjustable lengths.

6. A nostril protector having expansible and collapsible units or members for insertion in the nostrils, each having oppositely movable shoes connected by toggles of which the arms are of independently adjustable lengths.

7. A nostril protector having expansible and collapsible units or members for insertion in the nostrils connected by a common bow and each consisting of oppositely movable shoes connected by toggles, and operating arms connected with the outer toggles and conforming to said bow.

In testimony whereof he affixes his signature.

HENRY BEALS.